Australian Government

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CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2021105871

The Commissioner of Patents has granted the above patent on 3 November 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Abhishek Bhatt of Associate Professor, Department of Electronics and Telecommunications, College of engineering pune, Wellesely Rd Shivajinagar - 411 005 Maharashtra India

Title of invention:

Multimode image fusion technique for automated correlation identification in medical images

Name of inventor(s):

Bhatt, Abhishek

Term of Patent:

Dated this 3rd day of November 2021

Commissioner of Patents

COMMONWEALTH OF AUSTRALIA
AUSTRALIA
PATENT OFFICE

PATENTS ACT 1990

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022

(21) Application No.202231012984 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SHANK FOOT ORTHOSIS SYSTEM USING SECOND-ORDER SLIDING MODE CONTROLLER

(51) International classification :A61F0005010000, A61B0005047800, A61B0005048400, G01P0013000000, G08G0001005000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Rupam Gupta Roy
Address of Applicant :Assistant Professor, Electronics and Instrumentation Engineering Department, National Institute of Technology, Agartala.
2)Dr. Girish V. Lakhekar
3)Anurupa Gupta Roy Lodh
4)Rajakumar B. R
5)Binu Dennis
(72)**Name of Inventor :**
1)Dr. Rupam Gupta Roy
2)Dr. Girish V. Lakhekar
3)Anurupa Gupta Roy Lodh
4)Rajakumar B. R
5)Binu Dennis

(57) Abstract :
The main design of our invention discloses the shank foot orthosis system using a second-order sliding mode controller, which comprises a second-order Sliding Mode Control (SMC). The main purpose of the present invention is to support the movement of the knee joint for handicap. Generally, handicapped people can't move their legs to their desired target place. So for this purpose, the shank foot orthosis system is designed, which is linked with brain signal so that can be controlled by adaptive Second-order Sliding Mode Control. Initially, the EEG recorder captures the activities of the brain signal and passes them to the AI module. Then physical estimation estimates the physical movement and then calculates the targeted position. Error estimation is used to estimate the errors of the targeted and original positions. Finally, the foot orthosis system is controlled by a second-order Sliding Mode controller.

ORIGINAL

No. 105053

सत्यमेव जयते

भारत सरकार

GOVERNMENT OF INDIA

पेटेंट कार्यालय

THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	336097-001
Date	10/12/2020 02:04:00
Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to DISINFECTING AND STERILIZING CHAMBER in the name of 1.DR. JAYANT RAJARAM PAWAR, DIRECTORATE OF RESEARCH, KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA-415539 2. DR. D. N. SONAWANE, DEPARTMENT OF INSTRUMENTATION AND CONTROL, COLLEGE OF ENGINEERING, PUNE, WELLESLEY RD, SHIVAJINAGAR, MAHARASHTRA, INDIA-411005 3. DR KIRAN DASHRATH DIWATE, B-3/15, MEENAL GARDEN, NEAR DEENANATH HOSPITAL, ERANDWANE, PUNE MAHARASHTRA, INDIA -411004. 4. DR. GEETA SATISH KARANDE, DEPARTMENT OF MICROBIOLOGY, KRISHNA INSTITUTE OF MEDICAL SCIENCE, KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA-415539, ET AL.

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

Controller General of Patents, Designs and Trade Marks

*The reciprocity date (if any) which has been allowed and the name of the country.
Copyright in the design will subsist for ten years from the date of Registration, and may underthe terms of the Act and Rules, be extended for a further period of five years.
This Certificate is not for use in legal proceedings or for obtaining registration abroad

ARGHYA ASHIS ROY,
C/O LEX REGIA 246, GANDHI NAGAR, NAGPUR-440 010
MAHARASHTRA, INDIA

Date of Issue 22/11/2021 14:49:37

ORIGINAL

No. 104543

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	336098-001
Date	10/12/2020 02:04:00
Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to DISINFECTING AND STERILIZING TRAY in the name of 1. DR. JAYANT RAJARAM PAWAR, DIRECTORATE OF RESEARCH, KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA-415539 2. DR. D. N. SONAWANE, DEPARTMENT OF INSTRUMENTATION AND CONTROL, COLLEGE OF ENGINEERING, PUNE, WELLESLEY RD, SHIVAJINAGAR, MAHARASHTRA, INDIA-411005 3. DR. KIRAN DASHRATH DIWATE, B-3/15, MEENAL GARDEN, NEAR DEENANATH HOSPITAL, ERANDWANE, PUNE MAHARASHTRA, INDIA -411004 4. DR. GEETA SATISH KARANDE, DEPARTMENT OF MICROBIOLOGY, KRISHNA INSTITUTE OF MEDICAL SCIENCE, KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA-415539, ET AL.

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

Controller General of Patents, Designs and Trade Marks

*The reciprocity date (if any) which has been allowed and the name of the country.
Copyright in the design will subsist for ten years from the date of Registration, and may underthe terms of the Act and Rules, be extended for a further period of five years.
This Certificate is not for use in legal proceedings or for obtaining registration abroad

ARGHYA ASHIS ROY,
C/O LEX REGIA 246, GANDHI NAGAR, NAGPUR-440 010
MAHARASHTRA, INDIA

Date of Issue 10/11/2021 13:37:35

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022111724
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE

(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	357923
आवेदन सं. / Application No.	:	3781/MUM/2013
फाइल करने की तारीख / Date of Filing	:	03/12/2013
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE (COEP)

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित VARIABLE SPEED DRIVE SYSTEM WITH BALL CLUSTER नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 3rd day of December 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled VARIABLE SPEED DRIVE SYSTEM WITH BALL CLUSTER as disclosed in the above mentioned application for the term of 20 years from the 3rd day of December 2013 in accordance with the provisions of the Patents Act,1970.

एकस्य कार्यालय THE PATENT OFFICE GOVT.OF INDIA भारत सरकार

अनुदान की तारीख : 05/02/2021
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **3rd day of December 2015** को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3rd day of December 2015 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022113031
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE

(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	365828
आवेदन सं. / Application No.	:	1464/MUM/2015
फाइल करने की तारीख / Date of Filing	:	08/04/2015
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN ORTHOPAEDIC PLASTER SPLINT नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 8th day of April 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ORTHOPAEDIC PLASTER SPLINT as disclosed in the above mentioned application for the term of 20 years from the 8th day of April 2015 in accordance with the provisions of the Patents Act,1970.

एकस्य कार्यालय THE PATENT OFFICE GOVT.OF INDIA भारत सरकार

अनुदान की तारीख :
Date of Grant : 30/04/2021

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **8th day of April 2017** को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of April 2017 and on the same day in every year thereafter.

Patent Search

Invention Title	A HAND REHABILITATION DEVICE
Publication Number	10/2022
Publication Date	11/03/2022
Publication Type	INA
Application Number	202021038770
Application Filing Date	08/09/2020
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	BIO-MEDICAL ENGINEERING
Classification (IPC)	B01L0003000000, H02K0015000000, G06F0017270000, F16K0031040000, A61B0005110000

Inventor

Name	Address	Country
SWAPNIL AJIT BUKSHETE	DEPARTMENT OF PRODUCTION ENGINEERING AND INDUSTRIAL MANAGEMENT, COLLEGE OF ENGINEERING PUNE, WELLESLEY ROAD, SHIVAJINAGAR, PUNE 411 005, MAHARASHTRA, INDIA	India
SANDEEP ANASANE	DEPARTMENT OF PRODUCTION ENGINEERING AND INDUSTRIAL MANAGEMENT, COLLEGE OF ENGINEERING PUNE, WELLESLEY ROAD, SHIVAJINAGAR, PUNE 411 005, MAHARASHTRA, INDIA	India
BHARATKUMAR BHAGATRAJ AHUJA	COLLEGE OF ENGINEERING PUNE, WELLESLEY ROAD, SHIVAJINAGAR, PUNE 411 005, MAHARASHTRA, INDIA	India
NIKHIL PANSE	VIMAL NIWAS, SUDARSHAN SOCIETY, MODEL COLONY, PUNE 411016 MAHARASHTRA, INDIA	India

Applicant

Name	Address	Country	Nat
COLLEGE OF ENGINEERING, PUNE	WELLESLEY RD., SHIVAJINAGAR, PUNE 411005, MAHARASHTRA, INDIA	India	Ind

Abstract:

ABSTRACT A HAND REHABILITATION DEVICE A hand rehabilitation device, to allow movement of each individual finger of a hand, from 0 to 90 degrees, to regain range said device comprising: a middle plate (11a), comprising a plurality of grooves (19), each groove providing a guide for links (24) to angulary displace about their individ points; a carrier element (20) connected with a lead screw (18); a roller mounting (32), to hold a plurality of roller elements (34) about its circumferential semicircular e roller element (34) spaced apart from an adjacent roller; and links (24), each link (24), having a curvilinear profile, providing support to a finger cap (28), each link (24) a corresponding roller element (34) to form said corresponding pivot point, each link (24) transferring motion generated to a corresponding finger cap (28), each finge being individually displaceable in at least two degrees of freedom. [[FIGURE 1]]

Complete Specification

DESC:FIELD OF THE INVENTION:
This invention relates to the field of biomedical engineering.

Particularly, this invention relates to hand rehabilitation.

More particularly, this invention relates to a device for flexion and extension of fingers with a thumb.

Specifically, this invention relates to a finger and thumb function rehabilitation device.

BACKGROUND OF THE INVENTION:
A hand's finger(s) can lose its functionality because of Burn Injuries, Traumatic Injuries, and neurological injuries, such as stroke, spinal cord injuries, traumatic brain or Parkinson's disease, or an accident.

Such losses/injuries severely affect the lifestyle of such patients (who have lost their fingers). E.g. poor gasping skills, poor coordination skills, inability to control con grip force

View Application Status

Page last updated on: 26/06/2019

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022125039

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	435205
आवेदन सं. / Application No.	:	201821011502
फाइल करने की तारीख / Date of Filing	:	28/03/2018
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A DEVICE TO MONITOR AND DETECT OBSTRUCTION IN AN ENDOTRACHEAL TUBE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A DEVICE TO MONITOR AND DETECT OBSTRUCTION IN AN ENDOTRACHEAL TUBE* as disclosed in the above mentioned application for the term of 20 years from the 28th day of March 2018 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 19/06/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2020 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28th day of March 2020 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022136715

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	501361
आवेदन सं. / Application No.	:	201621034738
फाइल करने की तारीख / Date of Filing	:	11/12/2016
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A SYSTEM AND METHOD FOR DEVELOPMENT OF A PATIENT SPECIFIC PATH GUIDANCE TOOL* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2016 के ग्यारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A SYSTEM AND METHOD FOR DEVELOPMENT OF A PATIENT SPECIFIC PATH GUIDANCE TOOL* as disclosed in the above mentioned application for the term of 20 years from the 11th day of December 2016 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 19/01/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2018 के ग्यारहवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11th day of December 2018 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022132176

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	476718
आवेदन सं. / Application No.	:	201621034740
फाइल करने की तारीख / Date of Filing	:	11/12/2016
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A SYSTEM AND METHOD FOR PRE-SURGICAL PLANNING USING NON-INVASIVE IMAGING TECHNIQUES* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2016 के ग्यारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A SYSTEM AND METHOD FOR PRE-SURGICAL PLANNING USING NON-INVASIVE IMAGING TECHNIQUES* as disclosed in the above mentioned application for the term of 20 years from the 11th day of December 2016 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 04/12/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2018 के ग्यारहवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11th day of December 2018 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022127342

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	448968
आवेदन सं. / Application No.	:	466/MUM/2013
फाइल करने की तारीख / Date of Filing	:	18/02/2013
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE (COEP)
आविष्कारकों का नाम /Name of Inventor(s)	:	1.AHUJA BHARATKUMAR BHAGATRAJ 2.AMRUTKAR PURUSHOTTAM MADHUKAR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A SYSTEM FOR HYDRO-DYNAMIC POLISHING* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2013 के अठारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A SYSTEM FOR HYDRO-DYNAMIC POLISHING* as disclosed in the above mentioned application for the term of 20 years from the 18th day of February 2013 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 01/09/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, फरवरी 2015 के अठारहवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 18th day of February 2015 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022126671

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	445160
आवेदन सं. / Application No.	:	1465/MUM/2015
फाइल करने की तारीख / Date of Filing	:	08/04/2015
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *AN AUTOMATED ACUPRESSURE GLOVE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2015 के आठवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *AN AUTOMATED ACUPRESSURE GLOVE* as disclosed in the above mentioned application for the term of 20 years from the 8th day of April 2015 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 16/08/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अप्रैल 2017 के आठवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 8th day of April 2017 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022128531

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	456539
आवेदन सं. / Application No.	:	4474/MUM/2015
फाइल करने की तारीख / Date of Filing	:	29/11/2015
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *AN AUTO-RETRACTABLE AND AUTOMATED ASSISTIVE DEVICE FOR USE PRIOR TO DIALYSIS* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2015 के उन्नतीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *AN AUTO-RETRACTABLE AND AUTOMATED ASSISTIVE DEVICE FOR USE PRIOR TO DIALYSIS* as disclosed in the above mentioned application for the term of 20 years from the 29th day of November 2015 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 04/10/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2017 के उन्नतीसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 29th day of November 2017 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022113031
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE

(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	365828
आवेदन सं. / Application No.	:	1464/MUM/2015
फाइल करने की तारीख / Date of Filing	:	08/04/2015
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN ORTHOPAEDIC PLASTER SPLINT नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 8th day of April 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ORTHOPAEDIC PLASTER SPLINT as disclosed in the above mentioned application for the term of 20 years from the 8th day of April 2015 in accordance with the provisions of the Patents Act,1970.

एकस्य कार्यालय THE PATENT OFFICE GOVT.OF INDIA भारत सरकार

अनुदान की तारीख :
Date of Grant : 30/04/2021

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **8th day of April 2017** को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of April 2017 and on the same day in every year thereafter.

पेटेंट कार्यालय
शासकीय जर्नल

OFFICIAL JOURNAL
OF
THE PATENT OFFICE

निर्गमन सं. 15/2022	शुक्रवार	दिनांक: 15/04/2022
ISSUE NO. 15/2022	FRIDAY	DATE: 15/04/2022

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

(PROF. (DR) UNNAT P. PANDIT)
CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS

15nd APRIL, 2022

CONTENTS

THE PATENT OFFICE
KOLKATA, 15/04/2022
Address of the Patent Offices/Jurisdictions
The following are addresses of all the Patent Offices located at different places having their Territorial Jurisdiction on a Zonal basis as shown below:-

1	Office of the Controller General of Patents, Designs & Trade Marks, Boudhik Sampada Bhavan, Near Antop Hill Post Office,S.M.Road,Antop Hill, Mumbai – 400 037 Phone: (91)(22) 24123311, Fax : (91)(22) 24123322 E-mail: cgpdtm@nic.in	4	The Patent Office, Government of India, Intellectual Property Rights Building, G.S.T. Road, Guindy, Chennai – 600 032. Phone: (91)(44) 2250 2081-84 Fax : (91)(44) 2250 2066 E-mail: chennai-patent@nic.in ❖ The States of Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu and the Union Territories of Puducherry and Lakshadweep.
2	The Patent Office, Government of India, Boudhik Sampada Bhavan, Near Antop Hill Post Office,S.M.Road,Antop Hill, Mumbai – 400 037 Phone: (91)(22) 24137701 Fax: (91)(22) 24130387 E-mail: mumbai-patent@nic.in ❖ The States of Gujarat, Maharashtra, Madhya Pradesh, Goa and Chhattisgarh and the Union Territories of Daman and Diu & Dadra and Nagar Haveli	5	The Patent Office (Head Office), Government of India, Boudhik Sampada Bhavan, CP-2, Sector –V, Salt Lake City, Kolkata- 700 091 Phone: (91)(33) 2367 1943/44/45/46/87 Fax: (91)(33) 2367 1988 E-Mail: kolkata-patent@nic.in ❖ Rest of India
3	The Patent Office, Government of India, Boudhik Sampada Bhavan, Plot No. 32., Sector-14, Dwarka, New Delhi – 110075 Phone: (91)(11) 25300200 & 28032253 Fax: (91)(11) 28034301 & 28034302 E.mail: delhi-patent@nic.in ❖ The States of Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttaranchal, Delhi and the Union Territory of Chandigarh.		

Website: www.ipindia.nic.in
www.patentoffice.nic.in

All applications, notices, statements or other documents or any fees required by the Patents Act, 1970 and The Patents (Amendment) Act, 2005 or by the Patents (Amendment) Rules, 2006 will be received only at the appropriate offices of the Patent Office.

Fees: The Fees may either be paid in cash or may be sent by Bank Draft or Cheques payable to the Controller of Patents drawn on a scheduled Bank at the place where the appropriate office is situated.

पेटेंट कार्यालय
कोलकाता, दिनांक 15/04/2022
• कार्यालयों के क्षेत्राधिकार के पते

विभिन्न जगहों पर स्थित पेटेंट कार्यालय के पते आंचलिक आधार पर दर्शित उनके प्रादेशिक अधिकार क्षेत्र के साथ नीचे दिए गए है:-

1	कार्यालय : महानियंत्रक, एकस्व, अभिकल्प तथा व्यापार चिहन, एंटोप हिल डाकघर के समीप, एस. एम. रोड, एंटोप हिल, मुम्बई- 400 037, भारत, फोन: (91) (22) 24123311 फ़ैक्स: (91) (22) 24123322 ई. मेल: cgpdtm@nic.in	4	पेटेंट कार्यालय, भारत सरकार इंटेलेक्चुअल प्रॉपर्टी राइट्स बिल्डिंग, इंडस्ट्रियल इस्टेट एसआईडीसीओ आरएमडी गोडाउन एरिया एडजसेन्ट टु ईगल फ्लास्क, जी. एस. टी. रोड, गायन्डी चेन्नई - 600 032. फोन: (91)(44) 2250 2081-84 फ़ैक्स: (91)(44) 2250-2066 ई. मेल: chennai-patent@nic.in ❖ आन्ध्र प्रदेश, तेलंगाना, कर्नाटक, केरल, तमिलनाडु तथा पुडुचेरी राज्य क्षेत्र एवं संघ शासित क्षेत्र, लक्षदीप
2	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, एंटोप हिल डाकघर के समीप, एस. एम. रोड, एंटोप हिल, मुम्बई- 400 037, फोन: (91) (22) 24137701 फ़ैक्स: (91) (22) 24130387 ई. मेल: Mumbai-patent@nic.in ❖ गुजरात, महाराष्ट्र, मध्य प्रदेश, गोवा तथा छत्तीसगढ़ राज्य क्षेत्र एवं संघ शासित क्षेत्र, दमन तथा दीव, दादर और नगर हवेली.	5	पेटेंट कार्यालय, भारत सरकार कोलकाता, (प्रधान कार्यालय) बौद्धिक संपदा भवन, सीपी-2, सेक्टर- V, साल्ट लेक सिटी, कोलकाता-700 091, भारत. फोन: (91)(33) 2367 1943/44/45/46/87 फ़ैक्स:/Fax: (91)(33) 2367 1988 ई. मेल: kolkata-patent@nic.in ❖ भारत का अवशेष क्षेत्र
3	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, प्लॉट सं. 32, सेक्टर- 14, द्वारका, नई दिल्ली- 110 075. फोन: (91)(11) 25300200, 28032253 फ़ैक्स: (91)(11) 28034301, 28034302 ई. मेल: delhi-patent@nic.in हरियाणा, हिमाचल प्रदेश, जम्मू तथा कश्मीर, पंजाब,राजस्थान, उत्तर प्रदेश, दिल्ली तथा उत्तरांचल राज्य क्षेत्रों, एवं संघ शासित क्षेत्र चंडीगढ़		

वेबसाइट: http://www.ipindia.nic.in
www.patentoffice.nic.in

पेटेंट अधिनियम, 1970 तथा पेटेंट (संशोधन) अधिनियम, 2005 अथवा पेटेंट (संशोधन) नियम, 2006 द्वारा वांछित सभी आवेदन, सूचनाए, विवरण या अन्य दस्तावेज़ या कोई शुल्क पेटेंट कार्यालय के केवल उपयुक्त कार्यालय में स्वीकृत होंगे।
शुल्क: शुल्क या तो नगद रूप में या Controller of Patents के नाम में देय बैंक ड्राफ्ट या चेक के द्वारा भेजी जा सकती है जो उसी स्थान के किसी अनुसूचित बैंक में प्रदत्त हो जहाँ उपयुक्त कार्यालय स्थित है ।

SPECIAL NOTICE

18 Months publication as required under Section 11A of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005.

Notice is hereby given that any person at any time before the grant of Patent may give representation by way of opposition to the Controller of Patents at appropriate office on the ground and in a manner specified under section 25(1) of the Patents (Amendment) Act, 2005 read with Rule 55 of the Patents (Amendment) Rules, 2006.

Notice is also given that if any interested person requests for copies of the complete specification, drawing and abstract of any application already published, the photocopy of the same can be supplied by the Patent Office as per the jurisdiction on payment of prescribed fees of Rs.8/- per page. If any further details are required to be obtained, the same can be provided by the respective Patent Offices on request.

(PROF. (DR) UNNAT P. PANDIT)
CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS

SPECIAL NOTICE

Under the new provision of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005 and Rules there under, Publication of the matter relating to Patents in the Official Gazette of India Part III, Section 2 has been discontinued and instead The Official Journal of the Patent Office is being published containing all the activities of The Patent Office such as publication of all the patent applications after 18th months , grant of patents & all other information in respect of the proceedings as required under the provisions of the Patents (Amendment) Act, 2005 and Rules thereunder on weekly basis on every **Friday**.

The Journal is uploaded in the website every Friday. So Paper form and CD-ROM form of the Journal are discontinued from 01/01/2009.

SPECIAL NOTICE

Every effort is being taken to publish all the patent applications under section 11(A) of the Patents Act. However, if duplication of publication of any application is found, then earlier date of publication will be taken for the purpose of provisional protection for applicant and Patent Office will grant Patent not before six months from the date of second publication, provided that there is there is no third party representation.

Early Publication:

The following patent applications have been published under section 11A (2) of The Patents (Amendment) Act 2005 and rule 24A of The Patents (Amendment) Rules, 2006. Any person may file representation by way of opposition to the Controller of Patents at the appropriate office against the grant of the patent in the prescribed manner under section 25(1) of the Patents (Amendment) Act 2005 read with the rule 55 of The Patents (Amendment) Rules, 2006:

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202111008240 A

(19) INDIA

(22) Date of filing of Application :26/02/2021

(43) Publication Date : 15/04/2022

(54) Title of the invention : HERBICIDAL COMPOSITIONS COMPRISING OF PHENYLPYRAZOLINE AND TRIAZOLINONE COMPOUNDS

(51) International classification	:A01N0047300000, A01N0043900000, A01N0043760000, A01N0043653000, A01N0039020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**

1)WILLOWOOD CHEMICALS PRIVATE LIMITED

Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------

Name of Applicant : NA

Address of Applicant : NA

(72)**Name of Inventor :**

1)MUNDHRA PARIKSHIT

Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------

2)MOHAN JITENDRA

Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------

(57) Abstract :

The present provides a synergistic herbicidal composition comprising Pinoxaden, Carfentrazone-ethyl and at least one herbicidal compound selected from Fenoxaprop-p-ethyl or Isoproturon, and uses thereof.

No. of Pages : 30 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/02/2021

(21) Application No.202111008241 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HERBICIDAL COMPOSITION COMPRISING OF PHENYLPYRAZOLINE AND TRIAZINONE COMPOUNDS

(51) International classification	:A01N0047300000, A01N0043900000, A01N0043707000, A01N0043400000, A01N0039020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)WILLOWOOD CHEMICALS PRIVATE LIMITED
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MUNDHRA PARIKSHIT
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------
2)MOHAN JITENDRA
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------

(57) Abstract :
The present invention provides a synergistic herbicidal composition comprising of phenylpyrazoline class of herbicide such as Pinoxaden, Triazinone class of herbicide such as Metribuzin and at least one herbicidal compound is selected from Isoproturon or Metsulfuron-methyl.

No. of Pages : 27 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/03/2021

(21) Application No.202111009906 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HERBICIDAL COMPOSITIONS COMPRISING OF PHOSPHONIC ACID COMPOUND

(51) International classification :A01N0033220000, A01N0041100000, A01N0057200000, A01N0043700000, A61K0031167000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)WILLOWOOD CHEMICALS PRIVATE LIMITED
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MUNDHRA PARIKSHIT
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------
2)MOHAN JITENDRA
Address of Applicant :409, Fourth Floor, Salcon Aurum, District Centre, Jasola, New Delhi -110 025, India ---------- ----------

(57) Abstract :
The present invention provides a synergistic herbicidal composition comprising Glufosinate-ammonium and at least two compounds selected from the group comprising Mesotrione, Oxyfluorfen, Atrazine, 2,4-D and uses thereof.

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2021

(21) Application No.202111016562 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PROGRESSIVE CRYOAGGREGATION OF GOLD NANOPARTICLES AND ITS USE IN COLDNESS INDICATORS WITH SHADE CARDS AND THEREOF

(51) International classification :A61K0033240000, B22F0009240000, B22F0001000000, H04N0007010000, A61K0047520000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY KANPUR
Address of Applicant :Dean, Research & Development, Room Number 151, Faculty Building, Post Office: IIT Kanpur, Kanpur 208016, Uttar Pradesh, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KUMAR, Ashok
Address of Applicant :Department of Biological Sciences and Bioengineering & Centre for Environmental Science and Engineering, Indian Institute of Technology Kanpur, Kanpur 208016, Uttar Pradesh, India ---------- ----------
2)MISHRA, Ankita
Address of Applicant :Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur 208016, Uttar Pradesh, India ---------- ----------
3)SHAIKH Shazia
Address of Applicant :Department of Biological Sciences and Bioengineering & Centre for Environmental Science and Engineering, Indian Institute of Technology Kanpur, Kanpur 208016, Uttar Pradesh, India ---------- ----------

(57) Abstract :
The present invention pertains to a coldness indicator for evaluating the freeze history of freeze-sensitive products comprising a colloidal suspension of AuNPs. Particularly, a coldness indicator comprising AuNPs in a dispersal medium selected from deionized water, phosphate buffer, tris buffer or the like in a concentration up to 0.1mM, within a pH range of 6-8. It also pertains to a kit comprising a colloidal suspension of AuNPs, a buffer solution and a shade card, which shade card provides colours relative to the progressive cryoaggregation of AuNPs, on exposure to sub-zero temperatures for different time intervals.

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2021

(21) Application No.202111016951 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED WELDING RECOMMENDATION SYSTEM

(51) International classification :B29C0065000000, G06F0009540000, G06F0021310000, G06Q0050180000, B23K0009100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BML Munjal University
Address of Applicant :67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. A.K. Prasada Rao
Address of Applicant :Department of Mechanical Engineering, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
2)Anmol Kapoor
Address of Applicant :Department of Computer Science Core, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
3)Kanav Mittal
Address of Applicant :Department of Mechanical Engineering, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
4)Bhavya Tuteja
Address of Applicant :Department of Mechanical Engineering, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------

(57) Abstract :
An artificial intelligence based welding recommendation system comprising of a user platform installed in a computing device that is operated by a user to input characteristic identity of similar and non-similar materials that are to be welded, a processing unit integrated with at least two databases which individually stores data regarding characteristic identities of similar and non-similar materials along with suitable welding processes, wherein the processing unit is configured with artificial intelligence to correlate the characteristic identity of materials with the stored database in order to evaluate appropriate welding processes and/or corresponding materials along with likeability percentage from the database, an output module associated with the computing device to display the appropriate welding processes and/or the corresponding materials along with likeability percentage that are to be utilized for carrying out effective welding.

No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2021

(21) Application No.202111016952 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD OF DEFECT ANALYSIS AT SUB-ASSEMBLY PRODUCTION LEVEL

(51) International classification :G06Q0010060000, G06Q0050040000, G01N0025720000, G07C0005080000, G06F0011360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BML Munjal University
Address of Applicant :67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Sumit Shandilya
Address of Applicant :School of Management, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
2)Dr. Jaskiran Arora
Address of Applicant :Associate Dean and Professor, School of Management, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
3)Dr. Vinayak Kalluri
Address of Applicant :Associate Dean and Associate Professor, School of Engineering and Technology, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------

(57) Abstract :
The present invention relates to a method of defect analysis at sub-assembly production level comprising the following steps – i) preparing a succinct plan for improving quality of a product based on a quality management program; ii) monitoring the program by automatically collecting data from the products utilizing plurality of sensors for detecting defects; iii) discovering sources of the defect based on analyzing value losses according to the data derived from defected products; iv) eliminating the defects by implementing a solution to recover the value losses; v) recreating the defects for verification of causes of the defects and validation of the implemented solution; vi) securing the program implementation by monitoring effectiveness of the solution in terms of loss recovery and vii) documenting the plan effective in removing defects from the products in a ‘reference guide’ which is referred in case future problems are encountered in the same production mechanism.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/06/2021

(21) Application No.202111026426 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DRAFTING TOOL

(51) International classification	:B43L0013200000, B43L0013000000, B43L0007080000, B43L0013140000, B42D0015000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SHARMA, Asmita
Address of Applicant :Assistant Professor, Chitkara School of Planning & Architecture, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. ---------- ----------
2)KAUR, Harleen
Address of Applicant :Assistant Professor, Chitkara School of Planning & Architecture, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. ---------- ----------
3)PATRA, Smita
Address of Applicant :Assistant Professor, Chitkara School of Planning & Architecture, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. ---------- ----------

(57) Abstract :
The present disclosure pertains to a drafting tool for designing purpose. The drafting tool (100) includes a first section including a T scale (102) configured to draw horizontal lines on a drawing representation medium. The drafting tool (100) includes a second section including a protractor (104), and a scale (106). The protractor (104) is configured to measure and mark one or more angles on the drawing representation medium. The scale (106) is movably coupled to the protractor (104), where the scale (104) facilitates in drawing straight lines for marked one or more marked angles. The second section is configured to slide horizontally on the first section through a string (108). The scale (106), and the protractor (104) are movably coupled, and the scale (106), and the protractor (104) are configured to slide horizontally on the T-Scale (102) with assistance of the string (108).

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/06/2021

(21) Application No.202111026446 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR PREPARATION OF INSTANT BROWN RICE HAVING LOW GLYCEMIC INDEX AND LONG SHELF LIFE

(51) International classification :A23L0007196000, A23L0007113000, A23L0003360000, A23L0005100000, A23L0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)KLA Foods India Ltd
Address of Applicant :2nd Milestone, Kichha Road, Rudrapur – 263 153, Distt: Udham Singh Nagar, Uttarakhand, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ashok Agarwal
Address of Applicant :KLA Foods India Ltd, 2nd Milestone, Rudrapur, Distt: Udham Singh Nagar, Uttarakhand - 263 153, India ---------- ----------

(57) Abstract :
The present invention discloses a method for preparation of fibre rich ready-to-eat instant brown rice which has the texture, taste, flavour and appearance similar to that of a freshly cooked brown rice. The instant brown rice, as per the present invention, has glycaemic index which is as low as 36.67, good sensory qualities and a shelf life of upto 6 months protecting the bacterial contamination till then. The method includes producing the cooked brown rice in freezer bags making it easy to transport and particularly beneficial for diabetes patients. This method also helps the rice to quickly reheat directly from the freezer without thawing, which prevents it from becoming mushy.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2021

(21) Application No.202111030789 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POWER MANAGEMENT SYSTEM FOR MANAGING MULTIPLE BATTERIES

(51) International classification	:H02J0007000000, H02J0009060000, B60L0058220000, G01R0031382000, G01R0031385000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BML Munjal University
Address of Applicant :67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)P Narasimha Chandra
Address of Applicant :Department of Mechanical Engineering, School of Engineering & Technology, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
2)Dr. Amiya K. Dash
Address of Applicant :Associate Professor, Department of Mechanical Engineering, School of Engineering & Technology, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------

(57) Abstract :
The present invention relates to a power management system for managing multiple batteries includes multiple batteries installed in one or more battery cabinets, employed with voltage sensors to measure voltage level of the batteries, a battery switching circuit consisting multiple switches that are connected with the batteries, allowing selection of any one of the batteries whilst isolating the remaining batteries to supply power to a load, a logic unit in connection with the sensors to receive voltage data acting as a key variable in SOC (State of Charge) of each battery, the logic unit is configured to operate the circuit in order to select batteries in a descending order of SOC of the batteries by comparing voltage level of selected battery with a threshold voltage, the unit actuates the circuit to select next battery when voltage level of selected battery goes below the threshold voltage.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/07/2021

(21) Application No.202111030791 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MODULAR ELECTRIC AXLE FOR VEHICLES

(51) International classification :B61F0005380000, F16H0048220000, B60B0035120000, F16H0048200000, B62M0023000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BML Munjal University
Address of Applicant :67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Ranbir Singh
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, BML Munjal University , 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
2)Dr. Surya Prakash
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, BML Munjal University , 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------

(57) Abstract :
The present invention relates to a modular electric axle for vehicles comprising, a pair of live axles 1 connected with a wheel of a vehicle of opposite side, where the axle 1 provides equal rotational movement to the wheel, a pair of hub motor 21 mounted over the live axle 1, where the hub motor 21 when induced with electric current, generate rotational motion, a differential unit 16 situated in between the both the live axle 1 that allows both the live axle 1 to spin in different rotations per minute, a set of cone clutch 6 attached in between the differential and the rotor shaft 15, that transfers the rotational motion carried by the rotor 9 to the differential in order to rotate the live axle and series of sensor 18, 22 that measure physical and electrical characteristics of the axle 1.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/01/2022

(21) Application No.202211002530 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ETHREL PRIMED SUGARCANE TOP AS PLANTING MATERIAL FOR REDUCING CANE CULTIVATION COST AND IMPROVING CANE AND SUGAR PRODUCTIVITY

(51) International classification :A01H0004000000, C05D0009020000, A01G0022000000, A01G0002000000, A01C0001020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)ICAR-Indian Institute of Sugarcane Research
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Raebareli Road, Lucknow – 226002, Uttar Pradesh, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Amaresh Chandra
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------
2)Dr. Pushpa Singh
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------
3)Dr. Radha Jain
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------
4)Dr. Satya Nand Sushil
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------
5)R. K. Singh
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------
6)Dr. Ashwini Dutt Pathak
Address of Applicant :ICAR-Indian Institute of Sugarcane Research, Lucknow – 226002 Uttar Pradesh ---------- ----------

(57) Abstract :
Ethrel Primed Sugarcane Top as Planting Material for Reducing Cane Cultivation Cost and Improving Cane and Sugar Productivity is a novel and non-conventional use of plant material in sugarcane cultivation which otherwise is two or three bud sett (piece of mature internodes) that are referred as cane setts. The cane top material, mostly made of growing soft meristematic tissues that is free from any diseases, are primed with Ethrel to obtain early and higher sprouting with profuse rooting to support its further growth and establishment in soils. It further emphasizes use of disease free plant material and proposes to reduce the drudgery in transport of bulky seed material needed at the time of planting. Other features of the invention are (1) Priming of cane top is performed with Ethrel (@100 ppm for at least 6 hours for attaining for maximum benefit in terms of sprouting and better crop growth. Ethrel has been re-purposed for improving sprouting by inducing gene associated with hydrolysis of sugars (2) Results of total RNA isolation from cane tops and semi-qRT-PCR, exhibited high expression of soluble acid invertase gene that rendered enhanced germination / sprouting. (3) The cane quality remained unaffected. (4) Finally, the invention saves the primary input cost spent in purchase and transport of planting material (in form of conventional three bud setts).

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/02/2022

(21) Application No.202211006616 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FLOOR CLEANING DEVICE

(51) International classification :A47L0011400000, A47L0011300000, B01D0050000000, B08B0001040000, A47L0009180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BML Munjal University
Address of Applicant :67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Amarnath Bheemaraju
Address of Applicant :Assistant Professor, Department of Chemistry, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
2)Sridharbabu Yarramaneni
Address of Applicant :Associate Professor, Department of Physics, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
3)Harish Puppala
Address of Applicant :Assistant Professor, Department of Civil Engineering, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------
4)Meenakshi Agarwal
Address of Applicant :Assistant Professor, Department of Electronics & Communication Engineering, BML Munjal University, 67 KM Milestone, National Highway - 8, Gurugram, Haryana- 122413, India. ---------- ----------

(57) Abstract :
The present invention relates to a floor cleaning device, comprising a collapsible frame 1 configured with a cleaning unit adapted in a manner to translate along a motorized guiding rack 18 mapped on the frame 1, the unit comprises of a vacuum pump 12 for intaking/absorption of dry dust from the floor surface, multiple sprayers 2 for spraying floor cleaning liquid on the floor surface after absorbing the dry and wet dust, a rotatable brush assembly 4 for scrubbing floor surface to remove accumulated wet dirt/dust, wherein the scrubbed out wet dirt/dust is absorbed by pump 12 and a vacuum main tube 13 having a first and second opening, wherein the first opening is linked with the pump 12 to receive dry and wet dirt/dust and the second opening is attached with a pair of conduits 15, 16 that carries dry and wet dirt/dust into separate vessels 8, 9.

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202211012486 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN OF SMART WASTE MANAGEMENT SYSTEM WITH INTELLIGENT EDGE DEVICE

(51) International classification :B65F0001140000, G06Q0010000000, G06Q0050260000, H04W0004200000, G01C0021360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)UTTARANCHAL UNIVERSITY
Address of Applicant :ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SHRAVAN KUMAR
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
2)RAJESH SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
3)ANITA GEHLOT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
4)S. K. SHAH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
5)VINNET KISHORE SRIVASTAVA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
6)DEVENDRA SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------

(57) Abstract :
The management of household waste is a problem in today's world. People are not self-motivated to throw the waste at the proper place. However, the authorities are spending a handsome amount in managing the waste. The improper arrangement of household waste and expenditure are problems to be addressed.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202211012487 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A METHOD OF RECYCLING MASKS TO UNMASK THE HUMAN LIVES

(51) International classification	:G06Q0050000000, B08B0003020000, D06M0016000000, G06N0020000000, C40B0060140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UTTARANCHAL UNIVERSITY
Address of Applicant :ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SHRAVAN KUMAR
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
2)VINIT KISHORE SRIVASTAVA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
3)SANJEEV KUMAR SHAH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
4)ANITA GEHLOT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
5)RAJESH SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
6)DEVENDRA SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
7)MANOJ KUMAR SHARMA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
8)MANISH GHALWAN
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------

(57) Abstract :
This invention says that the masks have become part and parcel of our lives, however, the disposal masks are getting piled up in dump yards. To follow the 3 R practice, the invention will develop the storage system integrated with recycling the masks.

No. of Pages : 13 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202211012493 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM OF SMART WIPER FOR WHITE BOARD

(51) International classification	:B60S0001040000, B60S0001340000, H04B0007080000, H01L0023000000, H04N0021422000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UTTARANCHAL UNIVERSITY
Address of Applicant :ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR SHRAVAN KUMAR
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
2)MR ABHISHEK PATHAK
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
3)DR. VINEET KISHORE SRIVASTAVA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
4)DR. SANJEEV KUMAR SHAH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
5)DR ANITA GEHLOT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
6)DR RAJESH SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
7)MR. DEVENDRA SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
8)DR. KAPIL JOSHI
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
9)MR. GAURAV THAKUR
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
10)DR. SHALU CHAUDHARY
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
11)MR. ARJUN DEV
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------

(57) Abstract :
This invention relates to a system of smart wiper for white board. Disclosed herein a system of smart wiper for white board comprises a set of sprinklers (100), Screen (101), Black Board (102), Slider Dusting machine (103), Camera (104), App Control (105), LCD (201), Micro Controller (202), Battery (203), RF Modem 2.4GHz (204), Key Pad (205), Beagle Bone Black (301), Stepper Motor Drive (302), Servo Motor for Slider, Power Supply (304), Camera (305); and a set Sprinkler Drivers (306). The duster automatically understands the dirt of the whiteboard and sprays the solution through an auto spray sprinkler and then the wiper cleans the whiteboard. There is a strip embedded with sprinklers on the top of the whiteboard and a vertically placed motorized wiper; and the wiper and sprinklers are operated by a remote.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202211012494 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM OF ANDROID AND IOS APP TO MONITOR THE QUALITY OF WATER IN HILLY AREAS

(51) International classification	:C02F0001000000, B01F0001000000, C02F0001680000, C02F0001500000, G06Q0050260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UTTARANCHAL UNIVERSITY
Address of Applicant :ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)S. K. SHAH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
2)RAJESH SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
3)SHRAVAN KUMAR
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
4)ANITA GEHLOT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
5)DHARAM BUDDHI
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
6)MR. DEVENDRA SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
7)PARIDHI JOSHI
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
8)IQBAL SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------

(57) Abstract :
This invention says that the water is life of lives and available drinking water in the hilly area. Our invention will identify the impurity (solid or chemical) of water before storage in the tank and send its alert through a proper communication to the government for taking proper precautions for ensuring its purity

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202211012495 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM OF MISCHIEVOUS ACTIVITY MONITORING DURING EXAMINATION

(51) International classification	:A61B0005000000, A61B0005110000, H04L0029080000, G06F0003041000, G06F0015000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UTTARANCHAL UNIVERSITY
Address of Applicant :ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. KAPIL JOSHI
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
2)MUKESH PANDEY
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
3)SOMIL KUMAR GUPTA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
4)DR. VINEET KISHORE SRIVASTAVA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
5)ANURAJ MALAV
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
6)DR. NAROTTAM SINGH CHAUHAN
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
7)DR. BHUPENDRA SINGH RAWAT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
8)ANITA GEHLOT
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
9)RAJESH SINGH
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
10)DR. RAJESH BAHUGUNA
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------
11)ANKITA JOSHI
Address of Applicant :UTTARANCHAL UNIVERSITY, ARCADIA GRANT, P.O. CHANDANWARI, PREMNAGAR, DEHRADUN - 248007, UTTARAKHAND, INDIA ---------- ----------

(57) Abstract :
This invention relates to a system of mischievous activity monitoring during examination. Disclosed herein a system of mischievous activity monitoring during examination comprises Co-processor [100], Computing Unit (Raspberry Pi) [101], Camera Module [103], Display Unit [104], and LED [105]; wherein said computing unit provides the underlying hardware platform for other component of the system; all other components are connected and controlled by this computing unit. The Camera Module [103] is the primary module through which video stream is captured by the computing unit; and this module is the main source of input. The Display Unit [104] is connected to the computing unit is the main output module that reflects the name of the suspected student.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202211018032 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVELOPMENT OF SCENE PERCEPTION SYSTEM FOR VISUALLY IMPAIRED PEOPLE USING IOT BASED SYSTEM

(51) International classification :G09B0021000000, A61H0003060000, A61F0009080000, G06Q0050260000, C09K0011020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Shailendra Kumar
Address of Applicant :Professor Department of Civil Engineering, School of Studies of Engineering & Technology Guru Ghasidas Vishwavidhalaya, Bilaspur, India ---------- ----------
2)Dr. Alok Kumar Singh Kushwaha
3)Dr. Abhishek Kumar
4)Ankit Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Shailendra Kumar
Address of Applicant :Professor Department of Civil Engineering, School of Studies of Engineering & Technology Guru Ghasidas Vishwavidhalaya, Bilaspur, India ---------- ----------
2)Dr. Alok Kumar Singh Kushwaha
Address of Applicant :Associate Professor Department of Computer Science and Engineering, School of Studies of Engineering & Technology Guru Ghasidas Vishwavidhalaya, Bilaspur, India ---------- ----------
3)Dr. Abhishek Kumar
Address of Applicant :Assistant Professor School of Computer Science and IT JAIN (Deemed to be University), India Bangalore India ---------- ----------
4)Ankit Kumar
Address of Applicant :Assistant Professor Department of Computer Engineering & Applications GLA University Mathura India ---------- ----------

(57) Abstract :
Although there is signage for the blind in big cities, adequate spaces and training, it is necessary to integrate technology into the device they use as a guide. Research worldwide opens the door for further development of technologies implemented in this critical component. The implementation of the device is aimed at the visually impaired population, who face adverse and unfavourable situations causing incidents. This situation arises due to society's general lack of knowledge about how to interact with people with visual impairment in different circumstances, such as in education and everyday life, and the potential of these people, their needs, abilities, and contributions to social life. The study built on previous work to develop intelligent canes based on these considerations. Finally, it is essential to note that invention is being developed to improve quality of life and mobility.

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202211019418 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A CUSTOMIZABLE DETACHABLE SHOE

(51) International classification	:A43B0003240000, A45F0003040000, A43B0023020000, C02F0009000000, E04G0005040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mr. Vatsal Soin
Address of Applicant :3/24 Vishnupuri, Kanpur, Uttar Pradesh, 208002 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Vatsal Soin
Address of Applicant :3/24 Vishnupuri, Kanpur, Uttar Pradesh, 208002 ---------- ----------

(57) Abstract :
The present disclosure explains a detachable and customizable shoe. The shoe includes a sole (101), an upper body (103) and a detachable strip (201). The sole (101) is detachably engaged with a first periphery of the detachable strip (201) by a zipper means and the upper body (103) is detachably engaged with a second periphery of the detachable strip (201) by a zipper means. The detachable strip (201) is provided for customizing parameters of the shoe including height and width. The engagement and disengagement of the sole (101) and the upper body (103) with the detachable strip (201) forms the detachable shoe, wherein the detachable strip (201) imparts customization of the shoe based on requirement of the wearer.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202211019774 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IN-SITU FLOATING GEL FOR STOMACH SPECIFIC DRUG DELIVERY AND PREPARATION METHOD THEREOF

(51) International classification	:A61K0009000000, A61K0031426000, A61K0031715000, A61K0008730000, A61K0033100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Rishabha Malviya
Address of Applicant :Department of Pharmacy, School of Medical and Allied Sciences, Galgotias University, Greater Noida, Uttar Pradesh, India-203201 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Rishabha Malviya
Address of Applicant :Department of Pharmacy, School of Medical and Allied Sciences, Galgotias University, Greater Noida, Uttar Pradesh, India-203201 ---------- ----------
2)Smriti Ojha
Address of Applicant :Department of Pharmaceutical Science & Technology, Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh, India-273016 ---------- ----------
3)Amrita Singh
Address of Applicant :Department of Pharmaceutical Science & Technology, Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh, India-273016 ---------- ----------
4)Hina Chadha
Address of Applicant :Department of Pharmacy Vishveshwarya Group of Institutions, Greater Noida, Uttar Pradesh, India-203207 ---------- ----------
5)Saurabh Kumar Gupta
Address of Applicant :Rameshwaram Institute of Technology and Management, Lucknow, Uttar Pradesh, India-227202 ---------- ----------
6)Satish Shilpi
Address of Applicant :Ravishankar College of Pharmacy, Bhopal, Madhya Pradesh, India-462010 ---------- ----------
7)Ashish Jain
Address of Applicant :Department of Pharmaceutical Sciences, Dr. Hari Singh Gour University, Sagar, Madhya Pradesh, India-470003 ---------- ----------
8)Preeti Verma
Address of Applicant :Dr. MC Saxena College of Pharmacy, Lucknow, Uttar Pradesh, India-226101 ---------- ----------
9)Swati Dikshit
Address of Applicant :Dr. MC Saxena College of Pharmacy, Lucknow, Uttar Pradesh, India-226101 ---------- ----------
10)Archana Adhana
Address of Applicant :Bharat Institute of Technology, Partapur bypass road, Meerut, Uttar Pradesh, India-250103 ---------- ----------
11)Sonali Sundram
Address of Applicant :Department of Pharmacy, School of Medical and Allied Sciences, Galgotias University, Greater Noida, Uttar Pradesh, India-203201 ---------- ----------
12)Swati Verma
Address of Applicant :Department of Pharmacy, School of Medical and Allied Sciences, Galgotias University, Greater Noida, Uttar Pradesh, India-203201 ---------- ----------

(57) Abstract :
Stomach specific drug delivery composition was required for the prevention and treatment of gastric diseases which produces antacid in stomach. The present invention relates to a floating in situ gel containing famotidine. The in situ floating gel composition comprises of tamarind seed polysaccharide polymer ranges from 1% to 2%; sodium alginate 0.5%; tri-sodium citrate 0.0625%; calcium carbonate 0.5% to 1.5%; sodium bicarbonate 0.5%; famotidine 800mg; and deionized water q.s. The present invention also provides a process for the preparation of in situ floating gel which comprises of heating tamarind seed polysaccharide polymer and sodium alginate solution at 60ºC-70ºC; adding tri sodium citrate in the solution and decrease the solution temperature below 40ºC; adding calcium carbonate or sodium bicarbonate to the solution; dissolving the solution and making a final volume of 25 ml; dissolving famotidine in the solution.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2022

(21) Application No.202211019832 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IDENTIFICATION OF THE OBJECTS IN RAILWAY TRACK USING THERMAL TECHNOLOGY AND ALERTS THE LOCO PILOT

(51) International classification	:B61L0023040000, G08B0013196000, G01S0007410000, B61L0027000000, C12Q0001684400
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr.T.Ganesh Kumar
Address of Applicant :School of Computing Science and Engineering, Galgotias University, Delhi NCR ---------- ----------
2)Dr.D.Murugan
3)Dr.Manish T.I
4)Dr. Priti Rishi
5)Dr. Usha
6)Dr V. Selvi
7)Dr.B.N. Prathiba
8)Dr Aruna Malik
9)Dr. Shajilin Loret
10)Ms. Indrakumari
11)Janarthanan S
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.T.Ganesh Kumar
Address of Applicant :School of Computing Science and Engineering, Galgotias University, Delhi NCR ---------- ----------
2)Dr.D.Murugan
Address of Applicant :Department of Computer Science and Engineering, Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu ---------- ----------
3)Dr.Manish T.I
Address of Applicant :Department of Computer Science and Engineering, Adi Sankara Institute of Engineering and Technology, Kalady, Kerala ---------- ----------
4)Dr. Priti Rishi
Address of Applicant :Electronics and Communication Engineering, SRM University, Sonpat, Delhi NCR ---------- ----------
5)Dr. Usha
Address of Applicant :Department of Computer Science Mother Terasa Women's University, Kodaikanal, ---------- ----------
6)Dr V. Selvi
Address of Applicant :Department of Computer Science Mother Terasa Women's University, Kodaikanal, India ---------- ----------
7)Dr.B.N. Prathiba
Address of Applicant :Assistant Professor and Head Department of Computer Science G.Venkataswamy Naidu College Kovilpatti, Tuticorin District ---------- ----------
8)Dr Aruna Malik
Address of Applicant :Department of Computer Science and Engineering, Dr. B.R Ambedkar National Institute of Technology, Jalandhar, Punjab. ---------- ----------
9)Dr. Shajilin Loret
Address of Applicant :Department of Information Technology Francis Xavier Engineering College Tirunelveli, Tamilnadu ---------- ----------
10)Ms. Indrakumari
Address of Applicant :School of Computing Science and Engineering, Galgotias University, NCR, Delhi ---------- ----------
11)Janarthanan S
Address of Applicant :School of Computing Science and Engineering, Galgotias University, NCR, Delhi ---------- ----------

(57) Abstract :
The invention discloses object invasion detection methods and systems in the railway track and the level crossing. The detection method comprises the following steps: step S1, determining whether invasion objects exist on the track or not; S2, if there is an invasion object, positioning the invasion object and obtaining the type of the invasion object; otherwise, continuing to execute the step S1 or ending the detection; S3, if the object is found on the track and likely to be an invasion. The detection method is mainly applied to detection, identification, positioning, and early warning of the invasion object in a railway system. A thermal camera and GPS-enabled long-range focusing thermal camera is fixed on the train engine and connected to the computer-enabled system with an algorithm that warns the driver about the invasion object on the track. The GPS shares information about the train, and thus it is useful to avoid collision among trains.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202211020183 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM AND METHOD TO LOCALIZE A SOUND SOURCE AND PREDICT ITS 3 DIMENSIONAL (3D) SPATIAL COORDINATES

(51) International classification	:H04R0003000000, H04R0001400000, H04R0005027000, G01S0003808000, G01S0005180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
Address of Applicant :Roorkee ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SNEHA SINGH
Address of Applicant :Department of Mechanical & Industrial Engineering, Indian Institute of Technology Roorkee, Roorkee-247667 ---------- ----------
2)SHIKHA
Address of Applicant :Department of Mechanical & Industrial Engineering, Indian Institute of Technology Roorkee, Roorkee - 247667 ---------- ----------

(57) Abstract :
The present invention relates to a system and method to localize a sound source and predict its 3 dimensional (3D) spatial coordinates. The device comprises a slanted-square-pyramid shaped array of five microphones, connected to a data acquisition unit, which in turn is connected to a signal processing unit. The microphone array has 4 microphones placed in the corners of a square and 1 microphone placed along the line passing through one corner of the square and perpendicular to the plane of the square. The (fig 1) acoustic pressure signals are acquired from the microphones and spectral de-noising is done. The time delays and intensity ratios (TD-IR) based calculations are done at every microphone pair and spatial coordinates are determined. The solution is found for both convergence and non-convergence conditions.

No. of Pages : 30 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202211020360 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SEALED FACE MASK

(51) International classification :A41D0013110000, A61M0016060000, A62B0023020000, A61M0016080000, A62B0018080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Graphic Era Hill University, Bhimtal Campus
Address of Applicant :Sattal Road, Bhimtal- 263156, Uttarakhand, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Amrita Pargaien
Address of Applicant :Assistant Professor, Pharmacy, Graphic Era Hill University, Bhimtal Campus ---------- ----------
2)Saurabh Pargaien
Address of Applicant :2. Saurabh Pargaien INDIAN India Assistant Professor, Pharmacy, Graphic Era Hill University, Bhimtal Campus ---------- ----------

(57) Abstract :
The application discloses a sealed face mask system. It comprises of a frame and a shield removably snap-fitted to the frame, wherein the frame comprises an upper end adapted to cover the nose and a lower end adapted to cover the mouth of the users. A sealed face mask includes a periphery. The periphery includes a seal that surrounds the nostrils and the mouth and that sticks to the skin of the face. The adhesive of the seal may be a skin friendly adhesive. The periphery of the face mask may be elastomeric. The face mask includes aroma agent to give comfort to the user for a long-time use.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202211020361 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART FLASK

(51) International classification	:A47G0019220000, A45F0003160000, H05B0001020000, C02F0001000000, A23L0033000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Graphic Era Hill University, Dehradun Campus
Address of Applicant :510, Society Area, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rahul Chauhan
Address of Applicant :Assistant Professor, CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------
2)Shubhanshu Kaintura
Address of Applicant :CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------
3)Niharika Dhyani
Address of Applicant :CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------

(57) Abstract :
On average, people need to consume around 2 liters of water every day and smart water bottles are the best way to help consumers achieve this, simply because they lead to a path of digitizing a person's water intake. Whether it's for consumers who are having difficulties with their diet plan because of lack of hydration, or just someone who wants to hydrate and keep healthy. Smart flask consists of UV-C Technology in which the smart flask has the power of self-sanitizing and cleaning drinking water without harmful germs. So, the flask can kill the viruses, bacteria and other microorganisms that can make the consumer sick. Moreover, the user can heat the water contained inside the Flask by providing a power supply to it, as many times it happens that we carry a thermos with us if we want to drink warm water, but it has a limitation that it keeps the water warm up to certain period only. So, here comes a solution for this the user can drink warm water whenever he wants with the help of Smart Flask

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202211020362 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART UMBRELLA WITH LIGHT

(51) International classification :A45B0003040000, A45B0025000000, A45B0011000000, A45B0003020000, F21V0021080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Graphic Era Hill University
Address of Applicant :Graphic Era Hill University 1. Sattal Road, Bhimtal- 263156, Uttarakhand, India 2. 510, Society Area, Clement Town, Dehradun – 248002, Uttarakhand, India ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Sonu Khanka
Address of Applicant :Nursing Tutor, Graphic Era Hill University, Bhimtal Campus ---------- ----------
2)Neha Joshi
Address of Applicant :Nursing Tutor, Graphic Era Hill University, Bhimtal Campus ---------- ----------
3)Neha Bhatt
Address of Applicant :School of Computing, Graphic Era Hill University, Dehradun, Campus ---------- ----------

(57) Abstract :
The Present invention of an umbrella with troch light. This type of invention helps in dark rainy weathers for clear vision of path during the rainy weathers, sky turns dark even during day making the visibility is low and chances of accidents is high therefore to prevents such accidents and improving safety of users a light is placed in an umbrella. Many times, a user is required to carry, torch light for beating the Darkness which causes extra burden to the user. The present invention discloses an outdoor umbrella with light, Comprising an umbrella assembly which include a sensor which is present below the light in (the handle of umbrella). This sensor detects darkness at any time & automatically illuminate light in the umbrella. You can use this umbrella for outdoor dinner activities also. Outdoor umbrella is very safe and reliable since providing any electric wire on the umbrella is avoided. In addition, the outdoor umbrella is energy-Saving and environmental friendly.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202211020363 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART HELMET

(51) International classification :A42B0003040000, A42B0003300000, G01S0019010000, A42B0003320000, A42B0003000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Graphic Era Hill University, Dehradun Campus
Address of Applicant :510, Society Area, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rahul Chauhan
Address of Applicant :Assistant Professor, CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------
2)Divyanshu Negi
Address of Applicant :Student, CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------
3)Ashutosh Uniyal
Address of Applicant :Student, CSE Department, Graphic Era Hill University, Dehradun Campus ---------- ----------

(57) Abstract :
Wearing helmets is the most basic but most important thing to be kept in mind. With nothing else protecting you from serious brain injury, the best safety precaution you can do is protect your head with a helmet. These road accidents cause a series of global economic losses estimated in road traffic damage costs of $518 billion a year. A smart helmet included integrated electronics providing safety and convenience features. Helmet features includes a global locating system, sensor, a mobile communications network device, a small display panel and a microphone. The helmet is aware of the user's location and interactions with the environment. The helmet can provide data to a user, monitor the user's actions and condition, and send information to others about user's location and condition. The present invention is designed for the safety and security of the women. This smart helmet encourages people to wear helmet while driving. Apart from the safety, facilitating the medication at the right time to the victim in case of any accidents is the prime motive of the proposed system.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020382 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR EFFICIENT SEPARATION/DETACHMENT OF FLAKES FROM THE AMLA SEED

(51) International classification	:C11B0001040000, A61K0036470000, B29B0017020000, C22B0007000000, A23L0002020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Rishika Tewari
Address of Applicant :Department of Food Technology, Harcourt Butler Technical University, Nawabganj, Kanpur – 208002, Uttar Pradesh, India ---------- ----------
2)Dr. Vivek Kumar
3)Dr. H.K Sharma
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rishika Tewari
Address of Applicant :Department of Food Technology, Harcourt Butler Technical University, Nawabganj, Kanpur – 208002, Uttar Pradesh, India ---------- ----------
2)Dr. Vivek Kumar
Address of Applicant :Department of Food Technology, Harcourt Butler Technical University, Nawabganj, Kanpur – 208002, Uttar Pradesh, India ---------- ----------
3)Dr. H.K Sharma
Address of Applicant :National Institute of Technology (NIT) (An Institute of National Importance), Agartala, West Tripura-799046, India ---------- ----------

(57) Abstract :
A method for separation of flakes from the seeds of amla fruit, the method comprising washing fresh amla fruits were under running tap water to remove dirt and other extraneous material; Pre-treatment of washed fresh amla fruits for a predefined microwave power level using microwave treatment, wherein the predefined period ranges from 1 minute to 23 minutes; Separating flakes mechanically by applying force using a predefined load cell and a circular probe.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020384 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FORMULATION FOR REDUCING INFERTILITY IN MALES AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61K0036480000, A61K0036486000, A61K0031616000, C08F0220140000, A61K0047180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Motherhood University
Address of Applicant :Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. G. Venkateshwarlu
Address of Applicant :Associate Professor, Faculty of Pharmaceutical Sciences, Motherhood University, Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------
2)Dr. Harsha Sharma
Address of Applicant :Assistant Professor, Department of Microbiology, Faculty of Science, Motherhood University, Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------
3)Dr. Navneet Kumar
Address of Applicant :Professor, Department of Chemistry, Faculty of Science, Motherhood University, Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------
4)Dr. Abhishek Swami
Address of Applicant :Professor, Faculty of Science, Motherhood University, Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------
5)Mr. K. Pavan Kumar
Address of Applicant :Associate Professor, Faculty of Pharmaceutical Sciences, Motherhood University, Roorkee-Dehradun Road, Village- Karoundi, Post-Bhagwanpur, Tehsil- Roorkee, Haridwar Roorkee Uttarakhand India 247661 ---------- ----------

(57) Abstract :
The present invention relates to the formulation for reducing infertility in males, comprises a Mucuna Pruriens in the range of 30% (w/v) to 35% (w/v), a aswagndha in the range of 30% (w/v) to 32% (w/v), a DHEA in the range of 20% (w/v) to 25% (w/v), Swarna Ksheerini in the range of 25% (w/v) to 28% (w/v), Safed musli in the range of 22% (w/v) to 24% (w/v), Sugandhipala and Shilajith(85 mineral).The method for preparing the formulation comprises of the following steps i.) The compounds were mixed to form a mixture and ii.) The compounds were then extracted with extracting liquids in a conical flask.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020389 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CAR T CELL THERAPY MECHANISM FOR CANCER TREATMENT

(51) International classification :C07K0014705000, A61K0039000000, A61K0039395000, C07K0016280000, C07K0014470000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Kapil Kumar
Address of Applicant :School of Pharmaceutical Sciences, Apeejay Stya University, Sohna-Palwal Road, Sohna, Gurgaon, Haryana-122103, India ---------- ----------
2)Subhabrata Kar
Address of Applicant :School of Pharmaceutical Sciences, Apeejay Stya University, Sohna-Palwal Road, Sohna, Gurgaon, Haryana-122103, India ---------- ----------

(57) Abstract :
A CAR T Cell Therapy mechanism for Cancer Treatment comprises the steps of: a) CAR T cell recognizes and binds to a targeted antigen on tumor cells; b) a conformational change is usually induced by binding that transmits the binding signal through the cell membrane and into the cell; c) second-generation receptors inside the cell, deliver both a co-stimulatory signal through the CD28 or 4-1BB domains in the cytoplasmic tail as well as a primary activation signal domain through the CD3 zeta domain; d) cytokines are then released by the activated CAR T cells and transcription factors that may induce cytotoxic activities against tumor cells and promote cell survival and function; wherein innate immune response activation by interferon (IFN)- gamma; wherein T cell survival as promoted by interleukin-2 (IL-2); wherein Tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) and Fas Ligand (FasL) may induce tumor cell apoptosis.

No. of Pages : 23 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020399 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TRANSDERMAL PATCH FORMULATION AND PREPARATION THEREOF

(51) International classification	:A61K0009700000, A61K0036280000, A61K0036532000, A61K0009000000, A61K0047360000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Adarsh Vijendra Institute of Pharmaceutical Sciences, Shobhit University
Address of Applicant :Adarsh Institutional Area, Babu Vijendra Marg, Gangoh, Distt. Saharanpur, Uttar Pradesh, India-247341 ---------- ----------
2)Dr. Sarvesh Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sarvesh Kumar
Address of Applicant :Adarsh Vijendra Institute of Pharmaceutical Sciences, Shobhit University, Adarsh Institutional Area, Babu Vijendra Marg, Gangoh, Distt. Saharanpur, Uttar Pradesh, India, 247341 ---------- ----------
2)Dr. Peeush Singhal
Address of Applicant :Assistant Professor, Department of Pharmaceutical Sciences, Gurukul Kangri (Deemed to be University), Haridwar, Uttarakhand, India, 249404 ---------- ----------
3)Dr. Ritu Vishnoi Singhal
Address of Applicant :Assistant Professor, Department of Botany, Chinmaya Degree College, BHEL Ranipur, Haridwar, Uttarakhand, India, 249403 ---------- ----------
4)Dr. Manisha
Address of Applicant :Associate Professor & Head of Botany Department, Chinmaya Degree College, Haridwar, Uttarakhand, India, 249407 ---------- ----------
5)Dr. Vijay Jyoti Kumar
Address of Applicant :Associate Professor, Department of Pharmaceutical sciences, H. N. B. Garhwal (A Central University), Chauras Campus, P. O. Kilkileshwar, District Tehri Garhwal, Uttarakhand, India, 249161 ---------- ----------
6)Prof. (Dr.) Ranjit Singh
Address of Applicant :Vice Chancellor & Director, Adarsh Vijendra Institute of Pharmaceutical Sciences, Shobhit University, Gangoh, Babu Vijendra Marg, Gangoh, Distt. Saharanpur, Uttar Pradesh, India, 247341 ---------- ----------
7)Dr. Somesh Thapliyal
Address of Applicant :Assistant Professor, Department of Pharmaceutical Sciences, H. N. B. Garhwal (A Central University), Chauras Campus, P. O. Kilkileshwar, District Tehri Garhwal, Uttarakhand, India, 249161 ---------- ----------
8)Mr. Lalatendu Mohanty
Address of Applicant :Department of Pharmaceutical Sciences, H. N. B. Garhwal (A Central University), Chauras Campus, P. O. Kilkileshwar, District Tehri Garhwal, Uttarakhand, India, 249161 ---------- ----------

(57) Abstract :
The present invention relates to a formulation of transdermal matrix patch. The transdermal matrix patch formulation comprises of methanolic extract of Ageratum conyzoides, hydroxypropyl methylcellulose, pectin, chitosan, sodium alginate, PEG 6000, glycerin, methanol and water. The invention also provides a process for preparation of the medicinal transdermal matrix patch, comprising of mixing methanolic extracts of Ageratum conyzoides with polymers solution, adding chitosan and stirring well the material using stirrer; casting the obtained uniform dispersion on glass petri plates; drying the petri plates at ambient temperature for 6-8 hours; removing dried films and cutting manually and storing. The prepared transdermal matrix patch was evaluated for its organoleptic characterization and in-vivo pharmacological studies. The transdermal matrix patch of present invention has potential usefulness for wound healing.

No. of Pages : 35 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020405 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SIMULATION OF OPTICAL WIRELESS COMMUNICATION SYSTEM USING MATLAB

(51) International classification :H04B0010112000, H04B0010600000, H04B0010250700, H04B0010079000, F24S0023770000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Ms. Kanchan Singh
Address of Applicant :University Polytechnic, IFTM University, Moradabad, Uttar Pradesh - 244102 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ms. Kanchan Singh
Address of Applicant :University Polytechnic, IFTM University, Moradabad, Uttar Pradesh - 244102 ---------- ----------
2)Dr. Neelu Trivedi
Address of Applicant :University Polytechnic, IFTM University, Moradabad, Uttar Pradesh - 244102 ---------- ----------
3)Ms. Swati Singh
Address of Applicant :University Polytechnic, IFTM University, Moradabad, Uttar Pradesh - 244102 ---------- ----------
4)Ms. Shilpi Pal
Address of Applicant :University Polytechnic, IFTM University, Moradabad, Uttar Pradesh - 244102 ---------- ----------

(57) Abstract :
The present invention relates to Optical Communication has emerged as viable technology for broadband wireless application that offers potential of high bandwidth capability. In this paper, it deals with the effect of Gaussian noise and turbulence effect, scintillation effect on the transmission line of optical medium using Matlab. Theory analysis and experimental results demonstrate that with same bandwidth used DPSK system has higher sensitivity over OOK and PSK system and this format can reduce the impairment from turbulence induced scintillation and hence is used in major optical system.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020408 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PHYTOCHEMICAL SCREENING, ANTIMICROBIAL, AND ANTIOXIDANT FREE RADICAL SCAVENGING ACTIVITY OF ORTHOSIPHON PALLIDUS

(51) International classification :A61K0036530000, C12P0021060000, A61K0031155000, C12Q0001180000, A61P0031040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Mukesh Kumar Singh
Address of Applicant :Associate Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad Uttar Pradesh, Pin Code: 244102 ---------- ----------
2)Dr. Gurdeep Singh
3)Dr. Deepak Kumar Basedia
4)Dr. Alok Singh Thakur
5)Dr. Ajit Kumar Pandey
6)Dr. Ritesh Patel
7)Mr. Sudeep Kumar Mandal
8)Dr. Asheesh Kumar Gupta
9)Dr. Arun Kumar Mishra
10)Dr. Amrita Mishra
11)Dr. Sushil Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Mukesh Kumar Singh
Address of Applicant :Associate Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad Uttar Pradesh, Pin Code: 244102 ---------- ----------
2)Dr. Gurdeep Singh
Address of Applicant :Associate Professor, School of Pharmaceutical Sciences, Lovely Professional University, Phagwara, Punjab, Pin Code: 144402 ---------- ----------
3)Dr. Deepak Kumar Basedia
Address of Applicant :Professor, Technocrats Institute of Technology-Pharmacy, Anand Nagar, BHEL, Bhopal, Madhya Pradesh, Pin Code: 462021 ---------- ----------
4)Dr. Alok Singh Thakur
Address of Applicant :Associate Professor, Shri Shankaracharya Institute of Pharmaceutical Sciences And Research, Junwani, Bhilai, Chhattisgarh, Pin Code: 490020 ---------- ----------
5)Dr. Ajit Kumar Pandey
Address of Applicant :Associate Professor, Shri Shankaracharya Technical Campus, Faculty of Pharmaceutical Sciences, Junwani, Bhilai, Chhattisgarh, Pin Code: 490020. ---------- ----------
6)Dr. Ritesh Patel
Address of Applicant :Associate Professor, Department of Pharmaceutical Sciences, Indore Institute of Pharmacy, Indore, Madhya Pradesh, Pin Code: 453331 ---------- ----------
7)Mr. Sudeep Kumar Mandal
Address of Applicant :Assistant Professor, Faculty of Pharmacy, Kalinga University, Near Mantralaya, Kotni, Raipur, Chhattisgarh, Pin Code: 492101 ---------- ----------
8)Dr. Asheesh Kumar Gupta
Address of Applicant :Associate Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
9)Dr. Arun Kumar Mishra
Address of Applicant :Professor, Central Facility of Instrumentation, Pharmacy Academy, IFTM University, Lodipur-Rajput Delhi Road, NH-24, Moradabad, Uttar Pradesh, Pin Code: 244102 ---------- ----------
10)Dr. Amrita Mishra
Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
11)Dr. Sushil Kumar
Address of Applicant :Professor & Director, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------

(57) Abstract :
The present invention relates to a preparation of ethanoic extract of Orthosiphon pallidus(OPEE) and evaluation for their anti-microbial and anti-oxidant activity. Antimicrobial activity was investigated by using agar well diffusion method The antioxidant activity of OPEE was investigated using various in-vitro models such as 1,1-diphenyl-2-picrylhydrazyl (DPPH), total antioxidant activity, metal chelating activity, superoxide, hydroxyl, nitric oxide and total reducing power. Results showed that the Ethanolic extract was found potent in all in-vitro models. Wherein the ethanolic extract showed the significant scavenging activity against iron chelating activity. It also significantly inhibited hydroxyl & superoxide radicals. Results revealed that the bacterial strain showed highest MIC when compared to fungal strain. The antimicrobial activity of OPEE as estimated by MIC was found nearly equivalent to standard drug Chlorhexidine when used against Staphylococcus aureus, Streptococcus mutans, Bacillus coagulans and Candia albicans.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020468 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A PROCESS OF ACTIVATING MITOCHONDRIAL PROTEASE AS A NOVEL MECHANISM TO REJUVENATE THE AGING HEPATOCYTES THEREBY MITIGATING DECOMPENSATION OF LIVER AND INFLAMMAGEING.

(51) International classification :C12N0005071000, A61Q0019080000, G01N0033500000, C07D0513040000, A61K0031198000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)INSTITUTE OF LIVER AND BILIARY SCIENCES (ILBS).
Address of Applicant :D-1, VASANT KUNJ NEW DELHI-110070, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. GAYATRI RAMAKRISHNA
Address of Applicant :ILBS, D-1, VASANT KUNJ NEW DELHI-110070, INDIA ---------- ----------
2)DR. NIRUPMA TREHANPATI
Address of Applicant :ILBS, D-1, VASANT KUNJ NEW DELHI-110070, INDIA ---------- ----------
3)DR. ARCHANA RASTOGI
Address of Applicant :ILBS, D-1, VASANT KUNJ NEW DELHI-110070, INDIA ---------- ----------

(57) Abstract :
The present invention relates to a process of activating mitochondrial protease as a novel mechanism to rejuvenate the aging hepatocytes thereby mitigating decompensation of liver and inflammageing. The invention described here is a new finding that Mitochondrial protease can prevent senescence (aging) of hepatocytes and thereby prevent or delay decompensation of the injured liver. Hence ours is the first report where our findings indicate that the liver decompensation can be prevented by preventing senescence associated changes in hepatocytes by activating the Liver Mitochondrial unfolding response by activating the CIpP (Caseinolytic Mitochondrial Matrix Peptidase Proteolytic Subunit). In this regard our is a novel study whereby we have highlighted the importance of mitochondrial unfolded response gene CLpP which can prevent senescence and help in hepatocyte

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020476 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN AI BASED SYSTEM FOR SMART CITY SECURITY

(51) International classification	:G06K0009000000, G06N0020000000, G08B0013196000, H04N0007180000, G06N0003040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Hari Om Sharan
Address of Applicant :Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------
2)Mr. Bhupendra Singh Dhakrey
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Hari Om Sharan
Address of Applicant :Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------
2)Mr. Bhupendra Singh Dhakrey
Address of Applicant :Research Scholar, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------

(57) Abstract :
The present invention relates an AI-based system (100) for smart city security. The system (100) comprises one or more cameras (102), a suspected capturing unit, and an alert generating unit (112). The one or more cameras (102) are configured to capture an image of the suspected people. The suspected capturing unit is operationally connected with the one or more cameras (102). The suspected capturing unit is configured to identify people or objects from the image, classify them based on posture and send rule-based alerts for the behavior. The present invention provides an AI-based system (100) for smart city security comprising the camera that can detect and identify culprits before they commit or harm anyone. The AI-based system (100) can learn patterns with the help of an existing data model. The face detections cameras (102) can allow only intended people on the premises such as homes, offices, and schools.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020477 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A QUANTUM COMPUTING SYSTEM INTEGRATED WITH KARNAUGH MAP USING MACHINE LEARNING

(51) International classification	:G06N0010000000, G06N0020000000, B82Y0010000000, G06F0008410000, H03K0019195000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mr. Manisha Verma
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------
2)Dr. Hari Om Sharan
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Manisha Verma
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------
2)Dr. Hari Om Sharan
Address of Applicant :Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh, Pin Code: 209217. ---------- ----------

(57) Abstract :
The present invention relates a quantum computing system (100) integrated with Karnaugh map using machine learning. The system (100) comprises a computing unit (102) and a quantum processor unit (116). The computing unit (102) is configured to design a quantum circuit using machine learning. The computing unit (102) comprises the Karnaugh module unit (104). The quantum processor unit (116) is operationally connected with the Karnaugh module unit (104). The quantum processor unit (116) comprises a set of quantum machine language instructions, the set of quantum machine language instructions includes a set of hardware executable instructions. At least one instruction in the instruction set can only be executed on quantum computing hardware. The quantum computing system (100) integrated with the Karnaugh map using machine learning gives a simple and rigorous quantum speed-up for a learning problem in the fault-tolerant regime.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020488 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COGNITIVELY CONTROLLING UTILIZATION OF ELECTRICITY AS PER CONTEXTUAL PREFERENCES OF A USER

(51) International classification :A23L0033175000, A61F0013720000, A61F0013680000, G08B0021040000, A61F0013490000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA
Address of Applicant :JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA C-20/1, C BLOCK PHASE 2, INDUSTRIAL AREA, SECTOR 62, NOIDA, UTTAR PRADESH-201301 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. ARUN KUMAR G
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA-201301, UTTAR PRADESH ---------- ----------
2)DR. B P MISRA
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA, UP ---------- ----------
3)DR. CHANDRA SHANKAR
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA, UP ---------- ----------
4)MR. ANURANJAN KANSAL
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA, UP ---------- ----------
5)DR. SANJEEV KUMAR SHARMA
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA, UP ---------- ----------
6)DR. ANIL B C
Address of Applicant :DEPARTMENT OF ECE JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA, UP ---------- ----------

(57) Abstract :
The present invention relates to a method for cognitively monitoring and controlling the utilization of electricity as per the contextual preference of a user. The method involves monitoring daily utilization of the user's electricity needs through IoT sensors (002), Analyzing and simulating contextual preference of the user's future electricity need using artificial intelligence (AT.) model (003), displaying and notifying statistical representation of cost expenses related to the analyzed future electricity needs of the user on augmented reality (AR) display (005); and dynamically controlling the excess electricity utilization as per the user's daily electricity need using the controller (007).

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020517 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ALTERNATE ELECTROLYTE GEL FOR RECHARGEABLE BATTERY

(51) International classification :H01M0010052500, H01M0010056500, H01M0010056900, H01M0010056800, H01M0002160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Rakesh Kumar Bachheti
Address of Applicant :Associate Professor, Department of Industrial Chemistry, College of Applied Sciences, Addis Ababa Science and Technology University, Addis Ababa, P.O. Box-16417, Ethiopia ---------- ----------
2)Archana Bachheti
3)Dr.L.Karikalan
4)Sankarsan Sahoo
5)Chandan Patra
6)Dr.D.Revathi
7)Subhasish Mohanty
8)Dr Rupesh Ramesh Deore
9)Dr. Durgaprasad Gangodkar
10)Dr Priyabrata Adhikary
11)Dr Susmita Kundu
12)Dr. Prince Prashant Sharma
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rakesh Kumar Bachheti
Address of Applicant :Associate Professor, Department of Industrial Chemistry, College of Applied Sciences, Addis Ababa Science and Technology University, Addis Ababa, P.O. Box-16417, Ethiopia ---------- ----------
2)Archana Bachheti
Address of Applicant :Professor, Department of Environment Science, Graphic Era (Deemed to be University), Dehradun - 248002, Uttarakhand, India ---------- ----------
3)Dr.L.Karikalan
Address of Applicant :Associate Professor and Head, Department of Automobile Engineering, VISTAS, Chennai - 600117 ---------- ----------
4)Sankarsan Sahoo
Address of Applicant :Assistant Professor, GITA Autonomous College, Bhubaneswar ---------- ----------
5)Chandan Patra
Address of Applicant :Assistant Professor, GITA Autonomous College, Bhubaneswar ---------- ----------
6)Dr.D.Revathi
Address of Applicant :Professor, Park College of Engineering and Technology, Coimbatore ---------- ----------
7)Subhasish Mohanty
Address of Applicant :Assistant Professor, GITA Autonomous College, Bhubaneswar ---------- ----------
8)Dr Rupesh Ramesh Deore
Address of Applicant :Assistant Professor G.T.Patil College Nandurbar Maharashtra ---------- ----------
9)Dr. Durgaprasad Gangodkar
Address of Applicant :Professor, Department of Computer Science & Engineering, Graphic Era Deemed to be University, Dehradun, Uttarakhand, India, 248002 ---------- ----------
10)Dr Priyabrata Adhikary
Address of Applicant :Professor, Mechanical, New Horizon College of Engineering, Bangalore-560103 ---------- ----------
11)Dr Susmita Kundu
Address of Applicant :HOD-Electrical, Meghnad Saha Institute of Technology (MAKAUT), Kolkata-700150 ---------- ----------
12)Dr. Prince Prashant Sharma
Address of Applicant :Assistant Professor, Department of Pharmaceutical Sciences Gurukula Kangri Deemed to be University Haridwar, Uttarakhand ---------- ----------

(57) Abstract :
Li-ion conducting polymeric membranes containing 1-butyl-3-methylimidazolium tetrafluoroborate (BMIMBF4), polymer poly(vinylidene fluoride-co-hexafluoropropylene) (PVdF-HFP), and Lithium bis(trifluoromethanesulfonyl)imide) (LiTFSI) salt has been synthesised and characterised by various techniques. The composite polymeric membrane has good free-standing characteristics, thermal stability (300-400 C), and a wide electrochemical window (ECW) 4.0 to 4.50V. The room temperature ionic conductivity of the membrane (PVdF-HFP+20 wt.% LiTFSI) + 60% BMIMBF4 was found to be 1.7mS.cm-1.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202211020520 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AI AND MACHINE LEARNING OPERATED SPEED DEVELOPMENT FOR ELECTRICAL VEHICLES

(51) International classification	:B60L0053630000, G06Q0010040000, G06N0003040000, B60L0053800000, B60L0053600000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Ashulekha Gupta
Address of Applicant :Professor, Department of Management Studies, Graphic Era (Deemed to be)University Dehardun ---------- ----------
2)Dr. Anu Sayal
3)Dr. Kanwar Ajay Singh
4)Dr. Sanjeev Kumar
5)Mr. Munish Kumar
6)Dr. Sanjay Gupta
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Ashulekha Gupta
Address of Applicant :Professor, Department of Management Studies, Graphic Era (Deemed to be)University Dehardun ---------- ----------
2)Dr. Anu Sayal
Address of Applicant :Assistant Professor, Department of Mathematics, School of Engineering and Technology Jain (Deemed to be University) Bengaluru, Karnataka 560069 ---------- ----------
3)Dr. Kanwar Ajay Singh
Address of Applicant :Professor, Department of Management Studies, Graphic Era (Deemed to be)University Dehardun ---------- ----------
4)Dr. Sanjeev Kumar
Address of Applicant :Professor, Computer Science & Engineering, Himgiri Zee University, Dehradun ---------- ----------
5)Mr. Munish Kumar
Address of Applicant :Business Consultant, University of the Cumberlands,, USA ---------- ----------
6)Dr. Sanjay Gupta
Address of Applicant :Professor, Himalayan School of Biosciences, Swami Rama Himalyan University, Dehradun, Uttarakhand ---------- ----------

(57) Abstract :
As the innovative city applications are moving from conceptual models to the development phase, smart transportation is one of the smart cities applications, and it is gaining ground nowadays. Electric Vehicles (EVs) are considered one of the significant pillars of intelligent transportation applications. EVs are ever-growing in popularity due to their potential contribution to reducing dependency on fossil fuels and greenhouse gas emissions. However, large-scale deployment of EV charging stations poses multiple challenges to the power grid and public infrastructure. To overcome the issue of prolonged charging time, the simple solution of deploying more charging stations to increase charging capacity does not work due to the strain on power grids and physical space limitations. Therefore, we are focused on developing intelligent scheduling algorithms to manage the demand for public charging using modelling and optimisation. More recently, there has been a growing interest in data-driven approaches to modelling EV charging. Consequently, researchers are looking to identify consumer charging behaviour pattern behaviour that can provide insights and predictive analytics capability. This paper aims to provide a comprehensive review of supervised and unsupervised Machine Learning and Deep Neural Networks for charging behaviour analysis and prediction. Recommendations and future research directions are also discussed.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020619 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODOLOGY FOR PREPARATION OF TRANSDERMAL DRUG DELIVERY SYSTEM WITH NATURAL BIOPOLYMER MATRIX

(51) International classification	:A61K0031196000, A61K0009700000, A61K0009000000, G01N0033569000, A61K0036550000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Sachin Tyagi
Address of Applicant :Professor & Director, Bharat Institute of Technology, School of Pharmacy, Meerut, 250103 ---------- ----------
2)Dr. Yogendra Singh
3)Dr. Md. Shamim Hossain
4)Dr. Kunjal V. Soni
5)Dr. Shekhar Verma
6)Khemkaran Ahirwar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sachin Tyagi
Address of Applicant :Professor & Director, Bharat Institute of Technology, School of Pharmacy, Meerut, 250103 ---------- ----------
2)Dr. Yogendra Singh
Address of Applicant :Director, Maharaja Agrasen School of Pharmacy, Maharaja Agrasen University, Barotiwala, Baddi, Himachal Pradesh -174103 ---------- ----------
3)Dr. Md. Shamim Hossain
Address of Applicant :Department of Marketing, Hajee Mohammad Danesh Science and Technology University, Dinajpur, Bangladesh ---------- ----------
4)Dr. Kunjal V. Soni
Address of Applicant :Assistant Professor, Life Sciences, Shri M M Patel Institute of Science and Research, Kadi Sarva Vishwavidyalaya, Sector 23, Gandhinagar ---------- ----------
5)Dr. Shekhar Verma
Address of Applicant :Professor, University College of Pharmacy Raipur, Pt. Deendayal Upadhyay Memorial Health Sciences and Ayush University of, Chhattisgarh, Raipur, India ---------- ----------
6)Khemkaran Ahirwar
Address of Applicant :Assistant Professor, Sant Gahiraguru Vishwavidyalay, Ambikapur, Sarguja, Chhattisgarh, india ---------- ----------

(57) Abstract :
The present invention relatesmethodology for preparation of transdermal drug delivery system with natural biopolymer matrix.The method of preparing of matrix-dispersion type transdermal drug delivery system using biopolymer derived from flaxseed. Transdermal patches of diclofenac sodium were prepared with flaxseed mucilage in combination with hydroxyl propyl methyl cellulose (HPMC). Advantages of the present invention is the method is the relative low cost of FSM over conventional polymers used for TDDS matrix formulations – Flaxseeds are cheap, easily available and extraction of mucilage does not require any specialized equipment.

No. of Pages : 15 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020621 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL PLANT DECORATOR AND PURIFIER

(51) International classification :A01G0009020000, F21V0033000000, A01K0063000000, A01G0007040000, A01N0003020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Lovely Professional University
Address of Applicant :Jalandhar-Delhi GT road Phagwara, Punjab, India 144411. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Aparna Dash
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
2)Dr. D Kamalraj
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
3)Bhaskar Mitra
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
4)Mandeep Singh Saini
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
5)Pavitar Prakash Singh
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
6)Jaswant Singh
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
7)Rajdeep
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------

(57) Abstract :
The present invention is about a plant decorator and purifier with plurality of compartments for growing the plant, the compartments are transparent in nature for increasing the aesthetic value, the base has hollow cavity for keeping the nutrient media which can be replaced time to time. The sensor module has oxygen and carbon di oxide sensor to sense the amount of gases being released by the plant. The base has small solar battery with wifi and Bluetooth speakers for playing music to enhance plant growth. The device is designed so as to increase the aesthetic value of the area along with air purification

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020637 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART LIBRARY MANAGEMENT SYSTEM

(51) International classification	:A47B0097000000, G11B0017220000, G06K0009200000, G01R0019250000, B25J0013000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)JECRC University
Address of Applicant :Plot No. IS-2036 to IS-2039, Ramchandrapura Industrial Area, Vidhani, Sitapura Extension, Jaipur-303905, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Loveleen Kumar
Address of Applicant :Department of Computer Science and Engineering, JECRC University, Plot No. IS-2036 to IS-2039, Ramchandrapura Industrial Area, Vidhani, Sitapura Extension, Jaipur-303905, India. ---------- ----------
2)Dr. Manish Jain
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, JECRC University, Plot No. IS-2036 to IS-2039, Ramchandrapura Industrial Area, Vidhani, Sitapura Extension, Jaipur-303905, India. ---------- ----------

(57) Abstract :
A smart library management system, comprising multiple shelves 3 installed within an enclosure 1 to store books, an image capturing module 8 mounted within each shelves 3 to capture multiple images of surroundings to monitor books position, a revolving joint installed in between each holding unit 11 and conveyer belt 10, that is activated by microcontroller to provide a motion to particular holding unit 11, a motorized hook 9 attached within each shelves 3, microcontroller activates hook 9 and simultaneously deactivates electromagnetically attached revolving joint to provide flip to holding unit 11, a screen 4 installed at enclosure 1 to enter details regarding book required, multiple light emitting diodes installed within floor, microcontroller activates light emitting diodes to illuminate, a robotic arm 12 installed over a tray, which activates for picking book and a display panel 5 arranged within enclosure 1 to illustrate digital print of book.

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020640 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL MULTILAYER TIFFIN PACKACKING MATERIAL AND SYSTEM THEREOF

(51) International classification :A61K0036889000, B65D0075140000, A47J0047100000, B65D0085100000, A23L0003350800
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Lovely Professional University
Address of Applicant :Jalandhar-Delhi GT road Phagwara, Punjab, India, 144411. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Hiruni Navanjana Singankutti Arachchige Dona
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
2)Dr. D Kamalraj
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
3)Bhaskar Mitra
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
4)Mandeep Singh Saini
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
5)Pavitar Prakash Singh
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
6)Ezilanban JJ
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
7)Priyanjana Dey
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------

(57) Abstract :
The present invention is about a a multilayer food packing material which has trilayer top being cloth, middle being areca nut fibre and innermost being areca and cloth intermingled. The packing material is foldable and can be designed in to a lunch pack a rectangular arrangement having folding flaps (1, 2, 3), long flap (4) and buttons for closing. The packing material is designed especially to keep the food fresh. The sensor module with solar battery, micro controller and plurality of sensors are utilized for sensing the foul smell of food. The mobile application helps the user to identify the freshness of the food. The mobile application is IOS or android or both based

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020641 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL VANITY CASE WITH SANITIZATION

(51) International classification :A45C0011000000, G08B0021240000, H04L0029060000, H04L0012260000, A61L0002100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Lovely Professional University
Address of Applicant :Jalandhar-Delhi GT road Phagwara, Punjab, India 144411. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Megha M
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
2)Dr. D Kamalraj
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
3)Bhaskar Mitra
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
4)Jaswant Singh
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
5)Mandeep Singh Saini
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------
6)Pavitar Prakash Singh
Address of Applicant :Lovely Professional University, Jalandhar-Delhi GT road Phagwara- 144411. ---------- ----------

(57) Abstract :
The present invention is about maintaining the hygiene of the wearable's, the invention is a vanity case with sterilization so that the hygiene of the accessories, brushes etc can be maintained. The invention has plurality of compartments for keeping accessories and the sanitization is done via a uv bulb for a prescribed period of time. The mobile application also helps in opening and closing of the vanity case for added security feature

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022
(21) Application No.202211020709 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VOLTAGE REFERENCE GENERATOR AND TRIMMING SYSTEM

(51) International classification	:H03H0011120000, G05F0001567000, H01S0005060000, H03M0001660000, G05F0001625000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)VERVESEMI MICROELECTRONICS PVT LTD,
Address of Applicant :Tower 4, ARTHA SEZ, PLOT -21, TECH ZONE-4, GREATER NOIDA, UP ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SINGH Pratap Narayan
Address of Applicant :Tower 4, ARTHA SEZ, PLOT -21, TECH ZONE-4, GREATER NOIDA, UP ---------- ----------

(57) Abstract :
The invention provides a voltage reference generator comprises:local heater structured to generate continuous controlled temperature and uniform thermal profile, at multiple points further consists of Bipolar Junction Transistors (Q1, Q2, Q3), and heating element MN1, (b)temperature compensated resistances adopted to generate constant temperature compensated voltage reference (VREF) current using operational amplifier (OP2), transistor PMOS M4, and two or more resistors, positive (RP) and negative (RN), (c)current mirrors consisting of plurality of MOS transistors M2, M3, M4, configured to mirror current flowing in M4 in MOS M2 and M3, (d) digital modulators structured to generate modulated control signals, (e) control signals CTRL1, CTRL2, CTRL3, and CTRL4 are modulated digital bits being structured to control the temperature generated from the local heater in conjunction with variable resistances, by trimming change in VREF, (f) Digital to Analog Converter (DAC) is configured to generate output current proportional to IREF mirrored in M3. The invention also provides a method for calibrating a Voltage Reference by (1) performing the first voltage calibration while heater is off or at lowest modulation index of using control 1 by changing the said current mode DAC inputs to a value where reference voltage is at desired value at one temperature point, (2) Performing the second voltage calibration by activating heater with control 3 input to heater then monitoring the change in reference voltage by changing the modulation index of control 3 input then minimising this change by changing the first variable resistor with control 2 and repeat the process until there is change in output voltage more than acceptable accuracy with change in heater control input, (3)Performing the third voltage calibration by activating heater with control 3 input to heater then monitoring the change in reference voltage by changing the modulation index of control 3 input then minimising this change by changing the second variable resistor with control 4 and repeat the process until there is change in output voltage more than acceptable accuracy with change in heater control input.

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020762 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ASSESSMENT OF MONITORING SYSTEM FOR NOISE POLLUTION IN MARKETS DURING FESTIVE SEASON

(51) International classification	:H04B0011000000, H04R0029000000, G01H0017000000, G06Q0050260000, G01H0003140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr P. K. Saraswat
Address of Applicant :Associate Professor, Department of Physics Narain College, Shikohabad , Uttar Pradesh, 283135 India ---------- ----------
2)Dr Ajay Kumar Rajawat
3)Dr. Yogendra Kumar Saraswat
4)Dr. Swati Watts
5)Dr Pradeep Kumar Jadon
6)Dr. Esha Jain
7)Ms Sheetal Suresh Rajapurkar
8)Prof. (Dr.) Sagar H. Mohite
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr P. K. Saraswat
Address of Applicant :Associate Professor, Department of Physics Narain College, Shikohabad , Uttar Pradesh, 283135 India ---------- ----------
2)Dr Ajay Kumar Rajawat
Address of Applicant :Assistant Professor, Department of Chemistry, R.B.S College, Agra, Uttar Pradesh, India ---------- ----------
3)Dr. Yogendra Kumar Saraswat
Address of Applicant :Assistant Professor, Department of Chemistry B.S.A. College, Mathura, Uttar Pradesh, India ---------- ----------
4)Dr. Swati Watts
Address of Applicant :Marketing Analyst Rx InfoTech P Ltd, Faridabad, Haryana, India ---------- ----------
5)Dr Pradeep Kumar Jadon
Address of Applicant :Associate Professor, Department of Chemistry, Narain College, Shikohabad, Uttar Pradesh, India ---------- ----------
6)Dr. Esha Jain
Address of Applicant :Associate Professor, Chandigarh University, Mohali, Punjab, India ---------- ----------
7)Ms Sheetal Suresh Rajapurkar
Address of Applicant :Assistant Professor, Dr Vishwanath Karad MIT World Peace University, Pune, Maharashtra, India ---------- ----------
8)Prof. (Dr.) Sagar H. Mohite
Address of Applicant :Director, MGM UNIVERSITY Institute of Hotel Management, Aurangabad, Maharashtra, India ---------- ----------

(57) Abstract :
Aspects of present disclosure relates to a monitoring system and method for assessing noise pollution in crowded places like markets especially during festive season. The invention discloses a system for monitoring and assessing noise pollution level through plantation of sound level meters at certain specified places to receive the sound signals to advance the further steps to estimate the noise pollution level (NPL) and the noise climate (NC). The system constitutes at least a sound level meter for receiving sound signals emitted by individuals and music systems in an area; an identifier for transforming the sound signal into sound data; a sound analyzing circuit for analyzing the signals; followed by a locator unit for determining the geographical location information of the sound source and a trans receiver for transmitting the sound data in response to a specified time period to a remotely located computer system via a cloud network.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020776 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR LEGAL INFORMATION VERIFICATION AND REPORT GENERATION

(51) International classification :G06Q0050180000, G06F0016930000, G06Q0010100000, G06Q0010000000, G06F0016338000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)LQ GLOBAL SERVICES PRIVATE LIMITED
Address of Applicant :A-149, BLOCK A, LGF, DEFENCE COLONY, NEW DELHI, 110024, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KARAN KALIA
Address of Applicant :A-149, BLOCK A, LGF, DEFENCE COLONY, NEW DELHI, 110024, INDIA ---------- ----------
2)HIMANSHU PURI
Address of Applicant :A-149, BLOCK A, LGF, DEFENCE COLONY, NEW DELHI, 110024, INDIA ---------- ----------
3)ROHIT SHUKLA
Address of Applicant :A-149, BLOCK A, LGF, DEFENCE COLONY, NEW DELHI, 110024, INDIA ---------- ----------

(57) Abstract :
A system (100) for legal information report generation is disclosed. A legal entity data collection module (110) collects litigation information associated with a legal entity. A user input aggregation module (120) collects one or more user inputs associated with the legal entity. A data searching module (130) searches the legal entity in a legal information datastore, determines an identity of the legal entity, generates one or more search results representative of legal entities, enables the user to select a legal entity from the one or more search results generated. A legal data classification module (140) classifies the legal entity into one or more party categories and cases categories. A legal score calculation module (150) calculates a legal information score associated with the legal entity. A legal report generation module (160) generates a legal report depicting details associated with the legal entity, the legal information score and the litigation information.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2022

(21) Application No.202211020785 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : EFFICIENT SECURITY CONTROL USING BIG DATA ANALYTICS

(51) International classification	:H04L0029080000, G16H0010600000, G06Q0050220000, A61B0005145000, A61B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Ms. Shelly Bhardwaj
Address of Applicant :Assistant Professor, Department of Computer Applications, SCS&A, IFTM University, Moradabad-244102 ---------- ----------
2)Prof. Rahul Kumar Mishra
3)Mrs. Ritu Nagila
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ms. Shelly Bhardwaj
Address of Applicant :Assistant Professor, Department of Computer Applications, SCS&A, IFTM University, Moradabad-244102 ---------- ----------
2)Prof. Rahul Kumar Mishra
Address of Applicant :Director, School of Computer Science and Applications, IFTM University, Moradabad- 244102 ---------- ----------
3)Mrs. Ritu Nagila
Address of Applicant :Assistant Professor, Department of Computer Applications, SCS&A, IFTM University, Moradabad-244102 ---------- ----------

(57) Abstract :
As medical systems using wireless communication technology have progressed, there has been enormous development on the Internet of Medical Things (IoMT). By integrating biosensors with real-world items and using online collaboration, it is feasible to develop better healthcare applications. It has been decades since patients' physical health has been tracked, and several applications have been created to help medical teams give proper treatment. It is necessary to attach medical devices to patients' bodies, which are then connected to a cloud computing system to collect and process healthcare data. On the other hand, these medical devices depend on battery-powered sensors and have limited memory, transmission, and processing resources to work with. As a result, they are not optimal. Many cloud-based healthcare systems are assisting the community in keeping track of patients' conditions more effectively; however, they all suffer from latency concerns regarding data collection and storage. To provide distributed and timely computing of a decision-oriented medical system employing Secured Big Data analytics and Edge–Cloud architecture, SBD-EC was developed (SBD-EC). The mobile edges also collaborate with the cloud to deliver a secure algorithm that ensures reliable availability of medical data while maintaining the privacy and safeguarding against hazardous actions.

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020820 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVELOPMENT & VALIDATION OF UV SPECTROSCOPY AND RP-HPLC METHODS FOR THE ESTIMATION OF IMIQUIMOD

(51) International classification	:A61K0031474500, G01N0033150000, G01N0031160000, G01N0030040000, C08J0003090000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Anupama Diwan
Address of Applicant :Department of Pharmaceutical Sciences, Apeejay Stya University, Gurgaon (Hr), India ---------- ----------
2)Saroj Jain
Address of Applicant :Hindu College of Pharmacy, Sonepat 131001, Haryana, India ---------- ----------

(57) Abstract :
Development & validation UV Spectroscopy and RP-HPLC Methods for the Estimation of Imiquimod comprising the steps of a) Selection of solvent, b) Determination of absorption maxima, c) Preparation of stock and working standard solutions for pure drug d) Preparation of sample solutions. Selection of solvent: Solubility of the drug is checked in different solvents and UV spectra are recorded. The absorbance of the drug exhibited distinct max in methanol and 0.1N HCl. Determination of absorption maxima: Standard solution 1mg/ml of Imiquimod is prepared in methanol and 0.1N HCl. From this solution, 10µg/ml concentration of the drug is prepared. These solutions are scanned in the UV region (200-400 nm) to determine the max of the drug. Preparation of stock and working standard solutions for a pure drug: 10mg of imiquimod is weighed accurately and transferred into a 10 ml volumetric flask containing methanol. Preparation of sample solutions: Working standard solution of 10µg/ml of drug is further diluted with methanol to get 0.25-2.5µg/ml of the drug by serial dilution method.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020832 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FORMULATION OF LIPID BASED VESICLES FOR GENITAL WART

(51) International classification :A61K0009000000, A61K0031474500, A61K0009127000, A61K0047320000, A61K0008365000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)ANUPAMA DIWAN
Address of Applicant :Apeejay Satya University, Sohna Road, Gurgaon, Haryana, India ---------- ----------
2)SAROJ JAIN
Address of Applicant :Hindu College of Pharmacy, Sonepat 131001, Haryana, India ---------- ----------

(57) Abstract :
Formulation of LIPID-based vesicles for warts comprises the steps: a) PL 90G is dissolved in ethanol and the drug is added into lactic acid with span 80. b) Lipid ethanol solution is mixed with drug lactic acid span 80 mixture using a vortex mixer. c) Double distilled water is added slowly in a fine stream with constant mixing at 700 rpm with Remi mechanical stirrer, in a well-sealed container specially designed. d) Mixing is continued for another 5 min. e) The mixture is kept at 30°C during the preparation and then left to cool at room temperature. LBV of imiquimod using PL 90G, ethanol, lactic acid, and span 80 in carbopol gel base are successfully prepared and evaluated for their efficacy as a treatment option for genital warts.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020874 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WIDEBAND RDRA WITH A CHAMFERED EXTERNAL CONDUCTING PARALLEL STANDING STRIP

(51) International classification :H01Q0001380000, H01Q0001480000, H01Q0009280000, H04B0007185000, H01P0007100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Parikshit Vasisht
Address of Applicant :School of Engineering and Technology, Apeejay Stya University, Gurugram, Haryana, India ---------- ----------
2)Prof. Sudhakar Ranjan
Address of Applicant :Department of Electronics and Communication Engineering, Birla Institute of Technology, Mesra, Ranchi ---------- ----------
3)Dr.Neela Chattoraj
Address of Applicant :School of Engineering and Technology, Apeejay Stya University,Gurugram, Haryana, India ---------- ----------
4)Dr. Atul Kathait
Address of Applicant :School of Biosciences, Apeejay Stya University. ---------- ----------
5)Anuranjan Sharma
Address of Applicant :School of legal Studies, Apeejay Stya University ---------- ----------

(57) Abstract :
A wideband RDRA with a chamfered external conducting parallel standing strip comprising dielectric resonator, matching dielectric slab -FR4, sub- FR4 substrate, copper GND plane, microstrip line, chamfered edges, Lext, Lint; wherein wideband RDRA has a broad bandwidth ranging from 6.5 to 13.1 GHz; wherein wideband RDRA has a return loss of 245 dB at 7.0 GHz and the impedance bandwidth up to 75%; Wherein the low value of VSWR suggests that the antenna is broadly lossless. The broadside pattern of the antenna also fulfills the broadband requirements of the FS/FSS band; wherein RDRA can be used extensively in fixed wireless services operating on 7 GHz and satellite television TV Relay system (FS/FSS) operating in the range of 10.67 GHz.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020877 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR MACHINE LEARNING BASED MANAGEMENT OF INTELLIGENT INFANT CRADLE

(51) International classification :G06T0005000000, G06N0020000000, A61B0005000000, G06K0009000000, G06T0007700000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. RAJAN GUPTA
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
2)PROF. (DR) SUPRIYA MADAN
3)MS. AASTHA BHARDWAJ
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. RAJAN GUPTA
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
2)PROF. (DR) SUPRIYA MADAN
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
3)MS. AASTHA BHARDWAJ
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------

(57) Abstract :
The present invention relates to calming an infant based on the determined activities. The method may include; capturing, through an image sensor, an image of the infant; acquiring, at a microprocessor, the captured image from the image sensor; extracting, a region of interest (ROI) from the acquired image by applying an Open CV protocol; removing, noise from the extracted ROI to create a denoised image; comparing, the denoised image with the multiple sample infant images to determine an infant activity status by applying a machine learning protocol; controlling, a supply of electrical energy to the motor for swinging the sleeping compartment based on the determined infant activity status to calm the infant.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020882 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR WIRELESS UNIVERSAL REMOTE CONTROLLER IN MULTI-DEVICE ENVIRONMENT

(51) International classification :G10L0015220000, G06N0020000000, H04L0012280000, G08C0023040000, H04L0029060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. RAJAN GUPTA
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
2)PROF. (DR) SUPRIYA MADAN
3)MS. AASTHA BHARDWAJ
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. RAJAN GUPTA
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
2)PROF. (DR) SUPRIYA MADAN
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------
3)MS. AASTHA BHARDWAJ
Address of Applicant :VIVEKANANDA INSTITUTE OF PROFESSIONAL STUDIES - TECHNICAL CAMPUS AU - BLOCK, OUTER RING ROAD, PITAMPURA, NEW DELHI 110034 ---------- ----------

(57) Abstract :
The present invention relates to controlling of smart home appliances through voice commands. The method may include; receiving, a voice command from a user for selecting, through a mode button, a specific smart home appliance; acquiring, the received voice command from the computing device; analyzing, the acquired voice command to determine the multiple contexts; analyzing, each of the context to determine a control sentence by applying a machine learning protocol; comparing, the determined control sentence with the multiple command sentences in the command database to determine an appliance command by applying a machine learning technique; transmitting, the determined appliance command on a microcontroller; receiving, at a microcontroller, the determined appliance command from the server arrangement; analyzing, the received appliance command to determine an infrared (IR) code; transmitting, the determined IR code through an IR transceiver to control the appliances at the home.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020891 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM FOR PATIENTS REHABILITATION USING WEARABLE SENSORS: MACHINE LEARNING APPROACH

(51) International classification	:A61B0005000000, A61B0005110000, A61H0003000000, A61B0005103000, H04L0029060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)AKANSHA GUPTA
Address of Applicant :DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, GRAPHIC ERA (DEEMED TO BE UNIVERSITY), 566/6, BELL ROAD, CLEMENT TOWN, DEHRADUN, UTTARAKHAND, 248002, INDIA. ---------- ----------
2)DR. KAMAL KUMAR GHANSHALA
3)DR. VISHAL GUPTA
4)GRAPHIC ERA (DEEMED TO BE UNIVERSITY)
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)AKANSHA GUPTA
Address of Applicant :DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, GRAPHIC ERA (DEEMED TO BE UNIVERSITY), 566/6, BELL ROAD, CLEMENT TOWN, DEHRADUN, UTTARAKHAND, 248002, INDIA. ---------- ----------
2)DR. KAMAL KUMAR GHANSHALA
Address of Applicant :DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, GRAPHIC ERA (DEEMED TO BE UNIVERSITY), 566/6, BELL ROAD, CLEMENT TOWN, DEHRADUN, UTTARAKHAND, 248002, INDIA. ---------- ----------
3)DR. VISHAL GUPTA
Address of Applicant :HOUSE NO 335, LANE NO 11, CHAMANVIHAR, DEHRADUN, UTTARAKHAND, 248002, INDIA. ---------- ----------

(57) Abstract :
The proposed system arranges a plurality of functional elements in their respective configuration for evaluation of gait pattern of a user. The proposed systems can be configured to acquire biomechanical parameter data from an array of sensors, wherein the sensors are configured to be positioned in a hip region of the user. The acquired biomechanical parameter data can be collected, segregated and preprocessed to develop master biomechanical parameter information. Furthermore, the master biomechanical parameter information is analysed to determine gait pattern of the user, based on machine learning algorithms. A graphical output can be transmitted divulging the gait pattern and one or more remedial suggestion to improve walking style of the user.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020954 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A STABLE FULL LENGTH ALPHA-SYNUCLEIN INSILICO 3D PROTEIN MODEL AND THE METHOD OF DEVELOPMENT

(51) International classification :G01N0033680000, A61K0031198000, C07K0007060000, G16B0015000000, C07K0001000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)IIS deemed to be University
Address of Applicant :IIS Deemed to be University, Gurukul Marg, SFS, Mansarovar, Jaipur, Rajasthan 302020 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Neelu Kanwar Rajawat
Address of Applicant :IIS Deemed to be University, Gurukul Marg, SFS, Mansarovar, Jaipur, Rajasthan 302020 ---------- ----------
2)Ms. Kanika Bhardwaj
Address of Applicant :IIS Deemed to be University, Gurukul Marg, SFS, Mansarovar, Jaipur, Rajasthan 302020 ---------- ----------

(57) Abstract :
A stable full length ALPHA-SYNUCLEIN Insilico 3D protein model and the method of development. Parkinson disease (PD) is the most common neurodegenerative disease after Alzheimer, caused by steady depletion of dopamine in striatum. PD is indicated by tremor, rigidity and weakening of postural reflexes. Major hurdle in development of neuroprotective therapies due to improper understanding of disease leading to death of dopaminergic neurons but most of the research proved that Alpha synuclein oligomers or fibrils is the major cause for Lewy body formation which ultimately cause death of dopaminergic neurons. Therefore, if any drug having the potential to break down or slow down its oligomerisation or fibril formation can be a potential treatment for Parkinson's disease. Most of the current therapeutics work on rebuilds the striatal dopamine level via oral administration of levodopa (DA precursor) which stops the symptoms of PD. Although there is a long term motor complication with these DA precursors. Currently, no preventive treatment is available for PD. Various invitro and invivo methods are mostly used for drug development which very time consuming and expensive. Comparatively insilico approaches will be time friendly and cost effective. Also it can be used for a wide range of molecules for their interaction with a particular protein. Therefore, for drug discovery a full length, low resolution stable 3D protein model is needed which can be used to interact with different small molecules (pharmacological molecules) by the method of protein-ligand interaction. Protein-Ligand interactions occur through the molecular mechanics involving the conformational changes among low affinity and high affinity states. Ligand binding interactions changes the protein state and protein function. Therefore, this approach can be used in drug development. As there is no insilico 3D full length protein model is available for alpha-synuclein protein. So, we designed the same. Therefore we designed stable full length ALPHA-SYNUCLEIN Insilico 3D protein model which can further be used in drug development for Prkinson's disease.

No. of Pages : 29 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020960 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HIDDEN WEB EXPOSER UNIFIED METHOD FOR EXCAVATING THE WEB

(51) International classification	:G06N0005020000, G06F0016360000, G06F0016220000, B01D0046520000, A23L0002380000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Manpreet Singh Sehgal
Address of Applicant :Department of Computer Science and Engineering, Apeejay Stya University; Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
2)Prof. Jay Shankar Prasad
Address of Applicant :Department of Computer Science and Engineering, Greater Noida Institute of Technology, Plot No. 7, Knowledge Park II, Greater Noida, Uttar Pradesh 201310 ---------- ----------

(57) Abstract :
A hidden web exposer unified method for excavating the web comprising the steps of: a) So-Dom (Statement of the domain), b) Dom-Om (Domain Ontology Mapper), c) Ontology-Builder, d) F-Gen, e) Cap-F f) NoCap-F, g) HWPDE (Hidden Web page Data Extractor), h) C-Loop, i) HWPDE, j) Deep Web Database. The method proposes a domain-independent algorithm for getting these interfaces automatically filled up resulting in improved performance and a nice digital experience for the knowledge seeker.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020969 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM AND WEARABLE DEVICE FOR EMPLOYEE WELLNESS TRACKING AND IMPROVING WORK-LIFE BALANCE

(51) International classification :A61B0005000000, A61B0005110000, A61B0005160000, A61B0005020500, A61B0005024000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Nisha Agarwal
Address of Applicant :Director & Professor, School of Business Management, IFTM University, Lodhipur Rajput, Delhi Road, Moradabad, Uttar Pradesh, Pin Code: 244102 ---------- ----------
2)Dr. Swati Rai
3)Dr. Arkja Singh
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Nisha Agarwal
Address of Applicant :Director & Professor, School of Business Management, IFTM University, Lodhipur Rajput, Delhi Road, Moradabad, Uttar Pradesh, Pin Code: 244102 ---------- ----------
2)Dr. Swati Rai
Address of Applicant :Assistant Professor, School of Business Management, IFTM University, Lodhipur Rajput, Delhi Road, Moradabad, Uttar Pradesh, Pin Code: 244102 ---------- ----------
3)Dr. Arkja Singh
Address of Applicant :Assistant Professor, School of Business Management, IFTM University, Lodhipur Rajput, Delhi Road, Moradabad, Uttar Pradesh, Pin Code: 244102 ---------- ----------

(57) Abstract :
The present invention relates to a system (100) for employee wellness tracking and improving work-life balance. The system (100) comprises a wearable device (102), a data storage unit (104), and a monitoring unit (106). The wearable device (102) is configured to detect the abnormal condition of the health, stress level of the user and generate an alert on detection of the abnormal condition of the health of the user. The wearable device (102) comprises wearable unit wear, a central processing unit, and an alert generating unit. The monitoring unit (106) is operationally connected with the wearable device (102) and data storage unit (104). The monitoring unit (106) comprises a processor and a display unit. The present invention provides a system (100) and wearable device (102) for employee wellness tracking and improving work-life balance that can enhance current employee wellness.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211020970 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVELOPMENT AND CHARACTERIZATION OF HERBAL FORMULATION OF SESAMUM INDICUM FOR THE TREATMENT OF GASTRIC ULCERS

(51) International classification	:A61F0005000000, A61K0036185000, A61K0036580000, C08F0210180000, C07F0007080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mr. Shivam
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code:244102. ---------- ----------
2)Dr. Phool Chandra
3)Dr. Sushil Kumar
4)Mr. Amit Kumar
5)Ms. Pooja Malik
6)Mr. Munna Singh
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Shivam
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code:244102. ---------- ----------
2)Dr. Phool Chandra
Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
3)Dr. Sushil Kumar
Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
4)Mr. Amit Kumar
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
5)Ms. Pooja Malik
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
6)Mr. Munna Singh
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------

(57) Abstract :
The present invention relates to the preparation of herbal formulation of sesamum indicum for the treatment of gastric ulcers. The prepared herbal formulation was effective against pyloric ligation induced ulcer model and indomethacine induced ulcer model. It explain about the process for the preparation of the herbal formulation and also includes the method for the treatment of gastric ulcer by using the prepared formulation.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211021006 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUTOMATED DETECTION OF COVID-19 DISEASE USING DEEP NEURAL NETWORKS AND IMAGES PROCESSING

(51) International classification :G06K0009620000, G06N0003040000, G06N0003080000, G06T0007000000, G06K0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot no 32, 34, Knowledge Park III, Greater Noida, Uttar Pradesh 201310 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. Keshav Gupta
Address of Applicant :Sharda University, Plot no 32, 34, Knowledge Park III, Greater Noida, Uttar Pradesh, India, 201310 ---------- ----------
2)DR. Danish Ather
Address of Applicant :Sharda University, Plot no 32, 34, Knowledge Park III, Greater Noida, Uttar Pradesh, India, 201310 ---------- ----------
3)DR. Vivek Kumar Singh
Address of Applicant :Sharda University, Plot no 32, 34, Knowledge Park III, Greater Noida, Uttar Pradesh, India, 201310 ---------- ----------
4)DR. Ashish Kumar Tripathi
Address of Applicant :Malaviya National Institute of Technology Jaipur, Jaipur, Rajasthan, 302017 ---------- ----------
5)Mr. Amit Goel
Address of Applicant :Sharda University, Plot no 32, 34, Knowledge Park III, Greater Noida, Uttar Pradesh, India, 201310 ---------- ----------

(57) Abstract :
Automatic detection of covid-19 disease using deep neural networks and an images processing system. Wherein the method comprises a communication unit (02), a display unit (04), a storage unit (06), a control unit (08), and an input and output unit (10) the said control unit (08) also comprises of a for deep learning and image processing for automatic COVID-19 detection using bare chest X-ray images is presented. The proposed system was developed to provide accurate diagnostics for binary classification (COVID vs. No-Findings) and multi-class classification (COVID vs. No-Findings vs. Pneumonia)

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211021040 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODOLOGY FOR GENERATING PREDICTIVE MODEL FOR PREDICTING CONSUMER PURCHASE BEHAVIOUR

(51) International classification :G06Q0030020000, G06F0016903000, H04L0029060000, G06F0016951000, G06N0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Ashok Kumar
Address of Applicant :Assistant Professor, Teerthanker Mahaveer Institute of Management And Technology, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------
2)Shaivya Dixit
3)Bhriguraj Mourya
4)Aruno Raj Singh
5)Chandra Shekhar
6)Gurleen Kaur
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Ashok Kumar
Address of Applicant :Assistant Professor, Teerthanker Mahaveer Institute of Management And Technology, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------
2)Shaivya Dixit
Address of Applicant :Research Scholar, Department of Management, Dayalbagh Educational Institute, Agra ---------- ----------
3)Bhriguraj Mourya
Address of Applicant :Assistant Professor, College Of Law And Legal Studies, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------
4)Aruno Raj Singh
Address of Applicant :Assistant Professor, College of Law and Legal Studies, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------
5)Chandra Shekhar
Address of Applicant :Assistant Professor, College Of Law And Legal Studies, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------
6)Gurleen Kaur
Address of Applicant :Assistant Professor, Teerthanker Mahaveer Institute Of Management And Technology, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh ---------- ----------

(57) Abstract :
The present invention relatesmethodology for generating predictive model for predicting consumer purchase behaviour.First of all, thesystem generates, by a processor, online data associated with topic related searches performed by online users. In the next step thesystem ingests, by the processor, the online data with prestored research data. The prestored research data indicates history data about the topic. Further, the system processes, by the processor, the online data with the prestored research data to determine search pattern of the online users and user-behaviour information of the online users. Finally, thesystem generates, by the processor, the predictive model by analyzing the search pattern of the online users and user-behaviour information of the online users.

No. of Pages : 14 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211021041 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR CONSTRUCTION OF BRICK MATERIAL COMPRISING VEGETABLE FIBRES AGGLOMERATED USING A HEMP CONCRETE

(51) International classification :C04B0018160000, A61F0002080000, C04B0033132000, C04B0014280000, E01C0011220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Ritu Sharma
Address of Applicant :Asst. Prof., Subharti Institute of technology and Engineering, Swami Vivekanand Subharti University, NH-58 Delhi-Hardwar, Bypass subhartipuram, meerut, U.P 250002 ---------- ----------
2)Abhinav Singh
3)Mayankeshwar Singh
4)Abhishek Tiwari
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ritu Sharma
Address of Applicant :Asst. Prof., Subharti Institute of technology and Engineering, Swami Vivekanand Subharti University, NH-58 Delhi-Hardwar, Bypass subhartipuram, meerut, U.P 250002 ---------- ----------
2)Abhinav Singh
Address of Applicant :Asst. Prof., Subharti Institute of technology and Engineering, Swami Vivekanand Subharti University, NH-58 Delhi-Hardwar, Bypass subhartipuram, meerut, U.P 250002 ---------- ----------
3)Mayankeshwar Singh
Address of Applicant :Asst. Prof., Subharti Institute of technology and Engineering, Swami Vivekanand Subharti University, NH-58 Delhi-Hardwar, Bypass subhartipuram, meerut, U.P 250002 ---------- ----------
4)Abhishek Tiwari
Address of Applicant :Asst. Prof., Subharti Institute of technology and Engineering, Swami Vivekanand Subharti University, NH-58 Delhi-Hardwar, Bypass subhartipuram, meerut, U.P 250002 ---------- ----------

(57) Abstract :
The present invention relatesimage processing-based data security using virtual key replacement in image steganography. The bricks will be tested for strength, modulus of rupture, brittleness, abrasion resistance, water absorption, and efflorescence. The strength of bricks may be range from 1.8 MPa to 13.0 MPa, water absorption from 14 to 20%, and initial rate of suction between 0.24 and 2.43 kg/m2. All the bricks were classified as non-efflorescent. This may be the optimum ratio of quarry dust and marble powder get improved strength and durability. Bricks with enhanced properties can be developed using wastes.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021061 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUTOMATED DIET AND EXERCISE RECOMMENDATION SYSTEM BASED ON PERSONALIZED HEALTH DATA USING DEEP LEARNING

(51) International classification	:A61B0005000000, G06F0021620000, G16H0050300000, G16H0010600000, G16H0020600000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Vetrithangam Duraisamy
Address of Applicant :Associate Professor, Department of Computer Science & Engineering Chandigarh University Punjab. ---------- ----------
2)Dr. Syed Umar
3)Dr. ShrutiAggarwal
4)Dr.Hussain Syed
5)Mr.Isai Ashish Reddy
6)Mr.Bommina Naveen Sai
7)Dr.B.Arunadevi
8)Mrs.R.Himabindu
9)Mr.P.Naresh Kumar
10)Ms.P.Ashwini Goud
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vetrithangam Duraisamy
Address of Applicant :Associate Professor, Department of Computer Science & Engineering Chandigarh University Punjab. ---------- ----------
2)Dr. Syed Umar
Address of Applicant :Professor, Department of Computer Science, College of Engineering and Technology, Wollega University, Oromiya, Nekemte, Ethiopia-390. ---------- ----------
3)Dr. Shruti Aggarwal
Address of Applicant :Associate Professor, Department of Computer Science & Engineering Thapar University, Punjab-147004, India. ---------- ----------
4)Dr.Hussain Syed
Address of Applicant :Associate Professor, School of Computer Science and Engineering, VIT AP University, Andhra Pradesh-522237, India. ---------- ----------
5)Mr.Isai Ashish Reddy
Address of Applicant :Student, School of Computer Science and Engineering, VIT AP University, Andhra Pradesh-522237, India. ---------- ----------
6)Mr.Bommina Naveen Sai
Address of Applicant :Student, School of Computer Science and Engineering, VIT AP University, Andhra Pradesh-522237, India. ---------- ----------
7)Dr.B.Arunadevi
Address of Applicant :Professor, Department of Electronics and Communication Engineering, Dr.N.G.P Institute of Technology, Dr.N.G.P Nagar- Kalapatti Road, Coimbatore- 641048, Tamilnadu, India. ---------- ----------
8)Mrs.R.Himabindu
Address of Applicant :Assistant professor, Department of CSE(Cyber Security) Mallareddy University, Medchel district-500043, Telangana, India. ---------- ----------
9)Mr.P.Naresh Kumar
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, KG Reddy College of Engineering and Technology, Chilkur, Moinabad-501504, Rangareddy DT, Telangana, India. ---------- ----------
10)Ms.P.Ashwini Goud
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, KG Reddy College of Engineering and Technology, Chilkur, Moinabad-501504, Rangareddy DT, Telangana, India. ---------- ----------

(57) Abstract :
Live/real-time data from wearable medical devices and medical biosensors is collected and created as a dataset. A unique ID is generated after getting the user's personal data such as name, age, gender, height, weight, personal disease history/severity level, taking medications, surgery details, drink/smoke or any other habits, currently doing exercise, favourite taste, personal favourites and food habits, availability of the foods in their region, whether there have been negative risk events in the past, types of foot wear, sleeping adherence, and nature of work, and this personal health data is stored as a personaldata.csv file. The Laplace noise addition algorithm is used to provide privacy for personal and health data. The Multilayer perceptron algorithm with Gaussian noise and the Fuzzy clustering algorithm are used to learn the model and perform the analysis of the data. The person with the same behaviour and food habits will be observed. The live data is monitored on a time-to-time basis. The number of people with similar behaviour is counted. The foods they eat and the amount of exercise they do are continuously monitored. The improvement in health of the individual person is highlighted and tested with similar behaviour among other people. The recommendations for snacks, breakfast, lunch, dinner, water (considering body temperature), exercise, sleep adherence, and foot wear will be provided as output by the recommendation engine.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211021069 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A COMPACT CPW MICROSTRIP PATCH ANTENNA FOR IOT APPLICATION

(51) International classification	:H01Q0009040000, H01Q0001380000, H01Q0001480000, H01Q0009280000, H01Q0001500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Lovely Professional University
Address of Applicant :Jalandhar- Delhi GT road Phagwara, Punjab, India, 144411. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)RASHMI ROGES
Address of Applicant :Lovely Professional University, Delhi Jalandhar GT road Phagwara- 144411. ---------- ----------
2)PRAVEEN KUMAR MALIK
Address of Applicant :Lovely Professional University, Delhi Jalandhar GT road Phagwara- 144411. ---------- ----------
3)SANDEEP SHARMA
Address of Applicant :Bhagwan Parshuram Institute of Technology, PSP Area No.4, Sector-17, Rohini ---------- ----------

(57) Abstract :
The invention discloses a conventional coplanar waveguide (CPW) antenna consisting of a radiating patch (100) consisting of a single conducting track printed onto a FR4 dielectric substrate (109)(109), together with a log periodic antenna (108) and two pair of rectangular patches (103), (104) and (105), (106) on both sides of the microstrip feed line (107) and a ground plane (101). The antenna is compact having a size of 20mm × 20mm × 1.6mm. The antenna exhibits low voltage standing wave ratio of 1.06879 at a resonating frequency of 2.46 GHz and has a high gain of 9.36dB in the narrow bandwidth of 2.43 - 2.5 GHz. The low cost, highly energy efficient, compact size and optimized performance parameters makes the antenna to be widely used in unlicensed communication spectrum particularly to ISM band for IoT applications.

No. of Pages : 19 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2022

(21) Application No.202211021070 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL SPRAY TO INFLUENCE THE ANTI-OXIDANTS LEVEL IN BRASSICA NAPUS AND PROCESS THEREOF

(51) International classification	:C05G0003000000, A23L0033150000, A61K0008670000, A61K0031375000, A61K0009120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Lovely Professional University
Address of Applicant :Jalandhar- Delhi GT road Phagwara, Punjab, India 144411. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SHARMA, Monika
Address of Applicant :Lovely Professional University, Delhi Jalandhar GT road Phagwara- 144411. ---------- ----------
2)KUMAR, Prasann
Address of Applicant :Lovely Professional University, Delhi Jalandhar GT road Phagwara- 144411. ---------- ----------
3)KAUR, Jaspreet
Address of Applicant :Lovely Professional University, Delhi Jalandhar GT road Phagwara- 144411. ---------- ----------

(57) Abstract :
The present invention describesthenovel spray to influence the anti-oxidants level in Brassica napus and process thereof. A novel spray has prepared to enhance the level of anti-oxidant such as flavonols, flavonoids and ascorbic acid (Vitamin C) in the crop of Gobhi Sarson (Brassica napus). Essential nutrient sulphur and phytohormone cytokinin are used in the preparation of novel spray in the ratio of 98:1.After the preparation of said spray, its pH and EC behavior have assessed. Then, field has conducted and further levels of anti-oxidants such as Flavonols, Flavonoids and Ascorbic acid (Vitamin C) have evaluated and along with the level of Membrane Stability Index (MSI) in the crops of Gobhi Sarson (Brassica napus).

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021161 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FUEL TANK CAP ASSEMBLY

(51) International classification	:B60K0015040000, E05B0019040000, B60K0015030000, E05B0027000000, B60K0015035000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PAVNA INDUSTRIES LIMITED
Address of Applicant :9th Km Delhi Road, Gt Road, Bhankri Aligarh, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KHANNA, Arun
Address of Applicant :9th Km Delhi Road, Gt Road, Bhankri Aligarh, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
A fuel tank cap (100) for a fuel tank is disclosed. The cap (100) includes a cover (10) having a pre-defined outer diameter to enhance grip of the cap (100). A barrel (40) is coupled to the cover (10) includes a key insertion area and a protrusion (40b1). The barrel (40) further includes a plurality of slots (40c). The cap (100) includes a lock bar (50) having an upper cavity (51) for receiving the protrusion (40b1). The upper cavity (51) has a first wall (51a) and a second receiving portion (51c). At least one of the slots (40c) is equipped to interchangeably receive a key plate (40c1) to result in a pre-defined number of key combinations thereby minimizing thefts and enhancing security of the fuel tank. On rotation of a key, the protrusion (40b1) of the barrel (40) slides within the upper cavity (51) and seats within the second receiving portion (51c) thereby facilitating locking of the cap (100) on a filler neck.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021183 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYNTHESIS AND CHARACTERIZATION OF INDOLE DERIVATIVES FOR ANALGESIC ACTIVITY

(51) International classification	:C07D0413140000, B29C0065000000, A61B0005070000, C07D0209140000, C07D0209280000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mr. Munna Singh
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
2)Dr. Sushil Kumar
3)Dr. Arvind Kumar
4)Dr. Phool Chandra
5)Mr. Shivam
6)Mr. Rajkumar Singh Bharti
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Munna Singh
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
2)Dr. Sushil Kumar
Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
3)Dr. Arvind Kumar
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
4)Dr. Phool Chandra
Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
5)Mr. Shivam
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------
6)Mr. Rajkumar Singh Bharti
Address of Applicant :Assistant Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, Pin Code: 244102. ---------- ----------

(57) Abstract :
The present invention relates to the synthesis and characterization of indole derivatives for analgesic activity. 2-chloro-1(indoline-1-yl) ethanone was reacted with various substituted phenols to obtained different derivatives. The formed derivatives were further analyzed by TLC, melting point, IR and NMR. Further the synthesized compound were evaluated for in-vivo analgesic activity on various models like Eddy's hot plate (thermal pain induction), acetic acid induced writhing's (chemical induced pain), and Haffner's tail clip method (mechanical pain induction).

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021192 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ROLE OF DIGITAL MARKETING USING LATEST TECHNOLOGY SCOPE OPPORTUNITIES AND CHALLENGES

(51) International classification	:G06Q0030020000, G05B0015020000, H04M0011060000, B30B0011220000, C10L0001020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Parin Somani
Address of Applicant :Independent Academic Scholar, London, UK ---------- ----------
2)Dr. Reena Malik
3)Dr. N. Vijayanand
4)Dr. Suman Lata
5)Dr. Rohtash Kumar
6)Pradeep Kumar
7)Dr. Anurag Shrivastava
8)Dr. Namita Rajput
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Parin Somani
Address of Applicant :Independent Academic Scholar, London, UK ---------- ----------
2)Dr. Reena Malik
Address of Applicant :Assistant Professor, Chitkara Business School, Chitkara University, Punjab ---------- ----------
3)Dr. N. Vijayanand
Address of Applicant :Assistant Professor, Department of MBA, School of Management Studies, Vels Institute of Science Technology and Advanced Studies, Chennai ---------- ----------
4)Dr. Suman Lata
Address of Applicant :Principal, Department of Education, Delhi Institute of Rural Development, Nangli Poona, Delhi-110036 ---------- ----------
5)Dr. Rohtash Kumar
Address of Applicant :Associate Professor (Visiting Faculty), Department of Management, Bharati Vidyapeeth (Deemed to Be University) Institute of Management and Research, New Delhi ---------- ----------
6)Pradeep Kumar
Address of Applicant :Assistant Professor, Faculty of Management, Kumaun University, Nainital, Uttarakhand ---------- ----------
7)Dr. Anurag Shrivastava
Address of Applicant :Principal and Dean (R&D), Sushila Devi Bansal College, A.B. Road, Indore, 453331, India ---------- ----------
8)Dr. Namita Rajput
Address of Applicant :Professor, Department of Commerce, Sri Aurobindo College, University of Delhi, Delhi ---------- ----------

(57) Abstract :
Digital Marketing has become more famous after the involvement of the latest technologies in businesses. It has completely changed the old marketing methods and compelled marketers to stay connected with their buyers or customers via the internet for selling their products and services. Consequently, the marketers must consider and analyse both advantages and disadvantages of digital marketing while planning the best marketing and setting business goals. Due to its high efficiency and effectiveness, Digital Marketing has been recognised by all business entities, and now it is growing faster with every passing day. Soon, it will become easier for small businesses to compete with their large-scale competitors on the same platform. So digital marketing has become a crucial need of small and large scale businesses in today's digital environment.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021199 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BIOANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF TETRACYCLINE-CLASS ANTIBIOTIC IN BIOLOGICAL MATRICES BY LCMS-MS

(51) International classification	:G01N0030020000, G01N0030060000, G01N0030720000, A61K0031650000, G01N0030880000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Gorre Venkata Nagaraju
Address of Applicant :Research Scholar, Department of Pharmacy, School of Pharmaceutical Sciences, Jaipur National University, Jaipur, Rajasthan, India ---------- ----------
2)Uma Sankar Viriti
3)Mr. Vakkalagadda Siva Ganesh
4)Mr. Mahesh Namballa
5)Mr. Abhishek Kumar Mishra
6)Dr. Fels Saju
7)Mr. Jayatheertha S. Lokapur
8)Mrs. Arpitha J. Lokapur
9)Mr. Syed Sagheer Ahmed
10)Ms. Pooja RC
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Gorre Venkata Nagaraju
Address of Applicant :Research Scholar, Department of Pharmacy, School of Pharmaceutical Sciences, Jaipur National University, Jaipur, Rajasthan, India ---------- ----------
2)Uma Sankar Viriti
Address of Applicant :Associate Professor, Avanthi Institute of Pharmaceutical Sciences, Cherukupally, Bhogapuram, Vizianagaram, AP, ---------- ----------
3)Mr. Vakkalagadda Siva Ganesh
Address of Applicant :Research Scholar, Department of Pharmacology, Sri Adichunchanagiri College of Pharmacy,B.G. Nagar, Karnataka, 571448. ---------- ----------
4)Mr. Mahesh Namballa
Address of Applicant :Department of Pharmacy, School of Health Sciences, The Assam Kaziranga University Jorhat, Assam, India ---------- ----------
5)Mr. Abhishek Kumar Mishra
Address of Applicant :Department of Pharmacy, School of Health Sciences, The Assam Kaziranga University Jorhat, Assam, India ---------- ----------
6)Dr. Fels Saju
Address of Applicant :Associate Professor,Nirmala College of Pharmacy Muvattupuzha - 686661, Ernakulam, Kerala ---------- ----------
7)Mr. Jayatheertha S. Lokapur
Address of Applicant :Research Scholar, Department of Pharmaceutics, Sri Adichunchanagiri College of Pharmacy, B. G. Nagara - 571448 Karnataka, India. ---------- ----------
8)Mrs. Arpitha J. Lokapur
Address of Applicant :Research Scholar, Department of Pharmaceutics, Sri Adichunchanagiri College of Pharmacy B. G. Nagara - 571448 Karnataka, India ---------- ----------
9)Mr. Syed Sagheer Ahmed
Address of Applicant :Assistant Professor, Department of Pharmacology, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B.G Nagara-571448, Karnataka, India ---------- ----------
10)Ms. Pooja RC
Address of Applicant :Research Scholar, Department of Pharmacology, Sri Adichunchanagiri College of Pharmacy, B.G Nagar, Karnataka, 571448 ---------- ----------

(57) Abstract :
The present invention is directed to a method of detecting a Seracycline hydrochloride in a sample by adding an internal standard to a sample suspected of containing seracycline; removing interfering compounds from the sample; placing the sample on an HPLC column equilibrated with a Ammonium formate: acetonitrile (50:50 v/v) solution and collecting an eluent; and analyzing the eluent of the HPLC column with a Mass Spectrometer. The developed method was validated by parameters such as: system suitability, selectivity and sensitivity, Injector carry over and calibration curve.

No. of Pages : 25 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021250 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : REGENERATIVE SOFT PNEUMATIC HYBRID ACTUATOR

(51) International classification	:H01H0001000000, B23B0005160000, B25J0009140000, B81C0099000000, A43B0007120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Graphic Era (Deemed to Be University)
Address of Applicant :566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Narendra Gariya
Address of Applicant :566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
2)Brijesh Prasad
Address of Applicant :566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
3)Pushpendra Kumar
Address of Applicant :566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------

(57) Abstract :
The present invention relates to a regenerative soft pneumatic hybrid actuator (100) comprising a soft gripper end (101), a conductive polymer nano-composite (CPNC) membrane (102), and a stiff layer end (103); a. wherein said stiff layer end is attached at the bottom of said soft gripper end; and b. wherein said conductive polymer nano-composite (CPNC) membrane is attached or engraved with said stiff layer end. A preparation method of a regenerative soft pneumatic hybrid actuator is also disclosed.

No. of Pages : 24 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021288 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ADVANCED SYSTEM OF ALL-DIGITAL VOLTAGE REFERENCE LADDER FOR ANALOG-TO-DIGITAL CONVERTER

(51) International classification	:H03M0001560000, H03K0005151000, H03K0005133000, H02P0006180000, F02P0015000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Thapar Institute of Engineering & Technology
Address of Applicant :Bhadson Rd, Adarsh Nagar, Prem Nagar, Patiala, Punjab-147004 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ashima Gupta
Address of Applicant :H.no. B-16/220, Sunder Nagar, Pathankot, Punjab (145001) ---------- ----------
2)Anil Singh
Address of Applicant :#2357/2, Sector 45 C, Chandigarh (160047) ---------- ----------
3)Alpana Agarwal
Address of Applicant :#25, Doctors Colony, Bhadson Road, Patiala, Punjab (147004) ---------- ----------

(57) Abstract :
An advanced system (100) of all-digital Voltage Reference Ladder for Analog-to-Digital Converter. The present invention includes an inverter circuit(108), a delay unit(103), a time to voltage converter(106). The inverter circuit(108) includes an inverter circuit input node(110), an inverter circuit output node(112). The rising edge start signal is input into the inverter circuit (108). The delay unit(103) receives the falling edge signal from the inverter circuit(108). The delay unit(103) generates a delayed signal. The time to voltage converter(106) receives the delayed signal from the delay unit(103). Also, the time to voltage converter(106) also receives the start signal. The time to voltage converter(106) compares the delayed signal with the start signal and according to the time difference between these signals, then the time difference is converted to the reference voltage. The present invention generates reference voltage with the help of active element.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2022

(21) Application No.202211021296 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND SYSTEM OF KEY GENERATION AND MANAGEMENT FOR SMART-DEVICE BASED KEYLESS ACCESS TO ASSETS

(51) International classification	:H04L0009080000, H04L0009320000, H04W0012040000, G07C0009000000, H04L0009300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HCL Technologies Limited
Address of Applicant :806 Siddharth, 96, Nehru Place, New Delhi - 110019 INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Santosh Kumar Sharma
Address of Applicant :HCL Technologies Limited, SEZ, Sector 126, Noida, UP, 201304 ---------- ----------
2)Ravindranath L
Address of Applicant :HCL Technologies Limited, Elcot SEZ, Sholinganallur, Chennai, Tamil Nadu, 600119 ---------- ----------

(57) Abstract :
System and method of key generation and management for smart-device based keyless access to assets is disclosed. The method includes generating (1302) a base key associated with an asset (204) and a base key metadata (312). The base key includes a base private key (308) and a base public key (310). The method further includes generating (1304) a main key and a main key metadata (404). The main key may be associated with the asset (204) and a first smart device of a primary user, and the main key includes a main private key (408) and a main public key (406). The method further includes sharing of: the base private key (308), the main public key (310), and a base permission list (304) with the asset (204) and the base public key (308), the main private key (406), and the base permission list (304) with the first smart device.

No. of Pages : 52 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021299 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ULTRAWIDEBAND RRDA WITH A BEVEL-SHAPED PATCH AND A METHOD OF DEVELOPMENT THEREOF

(51) International classification :H01Q0001500000, H01Q0005250000, H01Q0019000000, H01Q0001480000, H04B0001716300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Parikshit Vasisht
Address of Applicant :School of Engineering and Technology, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
2)Robert Mark
Address of Applicant :Department of ECE, Guru Ghasidas Vishwavidyalaya, Bilaspur, India ---------- ----------
3)Dr. Neela Chattoraj
Address of Applicant :Department of ECE, Birla Institute of Technology, Mesra, Ranchi, India ---------- ----------
4)Prof. Sudhakar Ranjan
Address of Applicant :Department of Computer science and Engineering, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
5)Dr. Atul Kathait
Address of Applicant :School of Biosciences, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
6)Anuranjan Sharma
Address of Applicant :School of legal Studies, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------

(57) Abstract :
An ultrawideband RRDA with a bevel-shaped patch and the method of development thereof offers a UWB ranging from 2.5 - 16 GHz (measured value) i.e. fractional bandwidth of 142%; wherein the peak gain of 6.2 dBi at 6.3 GHz and radiation efficiency of 90% utmost value at 4.6 GHz is provided by the RRDA. The method of development of ultrawideband RRDA with a bevel-shaped patch comprising steps of a) the isolated RRDRA is designed using alumina ceramic in combination with a rectangular air cavity and vertical asymmetric conducting strips introduced on sidewalls of the RRDRA to stabilize the gain above 0dBi across the entire bandwidth. b) a slot is introduced in the partial ground plane to optimize the impedance bandwidth.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021312 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A MICROBIAL DESALINATION CELL COMPRISING A PEROVSKITE OXIDE CATALYST FOR OXYGEN REDUCTION REACTION

(51) International classification	:C02F0103080000, H01J0001280000, C02F0003000000, H01M0008101800, H01M0010040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot No. 32-34, Knowledge Park-III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)TOMAR, Richa
Address of Applicant :Assistant Professor, Physics, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
2)PANDIT, Soumya
Address of Applicant :Assistant Professor, Life Sciences, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
3)MATHURIYA, Abhilasha Singh
Address of Applicant :Scientist D, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi - 110003, India. ---------- ----------
4)SINGH, Pramod Kumar
Address of Applicant :Professor, Physics, SBSR, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
5)GUPTA, Piyush Kumar
Address of Applicant :Assistant Professor, Life Sciences, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
6)SAHNI, Mohit
Address of Applicant :Professor, Physics, SBSR, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
7)NAGARAJAN, Aberam
Address of Applicant :PG Student, Life Sciences, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
8)SHARMA, Aparna
Address of Applicant :PG Student, Life Sciences, Sharda University, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
The present disclosure generally relates to microbial or bio-electrochemical systems. More specifically, the disclosure is directed to a microbial desalination cell comprising a cathodic chamber comprising a perovskite oxide catalyst impregnated cathode; an anodic chamber comprising an anode electrically coupled to the cathode; and a desalination chamber. The present disclosure also provides a separator cathode assembly for wastewater desalination and a method of treating wastewater. The cell of the present disclosure is economical, generates high power output, degrades organic wastes, and desalinates wastewater with higher efficiency.

No. of Pages : 34 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021314 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : EXTENDABLE SURGICAL CUTTING INSTRUMENT

(51) International classification :A61B0017320000, A61B0017160000, A61B0017170000, A63B0023035000, A61B0017320500
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot No. 32-34, Knowledge Park-III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SAXENA, Rahul
Address of Applicant :Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
2)SAXENA, Suyash
Address of Applicant :Assistant Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
3)SINGH, Ajit Pal
Address of Applicant :Assistant Professor, Medical Lab Technology, Sharda School of Allied Health Sciences, Sharda University, Block 4, 5th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India ---------- ----------
4)MATHUR, Nidhi
Address of Applicant :PhD Scholar, Sharda School of Business Studies, Sharda Hospital, Sharda University, Block 7, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
A disposable surgical cutting instrument 100 is disclosed, including a pair of scissor members 102, each scissor member 102 comprising a cutting portion 104 and a shank portion 106. The shank portion 106 of each scissor member 102 includes a plurality of holes 108. The shank portions 106 of the scissor members 102 are configured detachably lock with the handle members 110 such that one or more of the holes 108 of each shank portion 106 detachably engage with one or more of locking ripits of the respective handle member 110. Thus, the holes 108 of the shank portions 106 and the locking ripits of the handle members 110 allow change in length of the surgical cutting instrument 100. Further, the cutting portion 104 of each scissor member 102 includes a cutting blade 120 removably configured in a cavity 118 of the cutting portion 104.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021315 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DISPOSABLE SURGICAL NEEDLE HOLDER

(51) International classification :A61B0017060000, A61B0017062000, A61B0017280000, A61B0018000000, B23B0031000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot No. 32-34, Knowledge Park-III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SAXENA, Suyash
Address of Applicant :Assistant Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
2)SAXENA, Rahul
Address of Applicant :Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
3)SINGH, Ajit Pal
Address of Applicant :Assistant Professor, Medical Lab Technology, Sharda School of Allied Health Sciences, Sharda University, Block 4, 5th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
4)MATHUR, Nidhi
Address of Applicant :PhD Scholar, Sharda School of Business Studies, Sharda Hospital, Sharda University, Block 7, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
A disposable surgical needle holder 100 is disclosed, including a pair of holder members 102, each holder member 102 comprising a holding portion 104 and a shank portion 106. The shank portion 106 of each holder member 102 includes a plurality of holes 108. The shank portions 106 of the holder members 102 are configured to detachably lock with handle members 110 such that one or more of the holes 108 of each shank portion 106 detachably engage with one or more of locking ripits 114 of the respective handle member 110. Further, the surgical needle holder 100 includes a pair of cover elements 120 removably configured with the holding portions 104. Each cover elements 120 includes jaw 121 for holding an object when the holding portions 104 are moved closer.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021316 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SURGICAL NEEDLE HOLDER

(51) International classification :A61B0017280000, A61B0017060000, A61M0005310000, A61M0005000000, A61B0018000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot No. 32-34, Knowledge Park-III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SINGH, Ajit Pal
Address of Applicant :Assistant Professor, Medical Lab Technology, Sharda School of Allied Health Sciences, Sharda University, Block 4, 5th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
2)SAXENA, Rahul
Address of Applicant :Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
3)BANTHIA, Ruchi
Address of Applicant :Professor & Head, Department of Periodontics, Modern Dental College & Research Centre, Indore, Madhya Pradesh - 453112, India. ---------- ----------
4)BANTHIA, Priyank
Address of Applicant :Ex-Dean, Index Institute of Dental Sciences, Dental Planet Multisolutions, Indore, Madhya Pradesh – 452001, India. ---------- ----------
5)SAXENA, Suyash
Address of Applicant :Assistant Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
6)MATHUR, Nidhi
Address of Applicant :PhD Scholar, Sharda School of Business Studies, Sharda Hospital, Sharda University, Block 7, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
A surgical needle holder 100 is disclosed, including a pair of holder members 102, each holder member 102 including a holding jaw portion 104 and a shank portion 106. The shank portion 106 of each holder member 102 includes a plurality of first holes 110. The surgical needle holder 100 includes a pair of handle members 114, each handle member 114 including a bore 118 to receive a portion of the shank portion 106 of the respective holder member 102. Each of the handle members 114 comprises a second hole 120. A pair of locking devices 124 are adapted to removably engage with the second holes 120 of the handle members 114 and the respective first holes 110 of the shank portions 106 for detachably locking the shank portion 106 with respect to the handle members 114.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021317 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SURGICAL CUTTING INSTRUMENT

(51) International classification :A61B0018000000, A61B0017320000, B26D0003160000, B25F0001000000, A63B0023000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sharda University
Address of Applicant :Plot No. 32-34, Knowledge Park-III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SAXENA, Suyash
Address of Applicant :Assistant Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
2)SAXENA, Rahul
Address of Applicant :Professor, Biochemistry, Sharda School of Allied Health Sciences, Sharda University, Block 4, 6th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
3)BANTHIA, Ruchi
Address of Applicant :Professor & Head, Department of Periodontics, Modern Dental College & Research Centre, Indore, Madhya Pradesh - 453112, India. ---------- ----------
4)BANTHIA, Priyank
Address of Applicant :Ex-Dean, Index Institute of Dental Sciences, Dental Planet Multisolutions, Indore, Madhya Pradesh – 452001, India. ---------- ----------
5)SINGH, Ajit Pal
Address of Applicant :Assistant Professor, Medical Lab Technology, Sharda School of Allied Health Sciences, Sharda University, Block 4, 5th Floor, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------
6)MATHUR, Nidhi
Address of Applicant :PhD Scholar, Sharda School of Business Studies, Sharda Hospital, Sharda University, Block 7, Plot No. 32, 34, Knowledge Park III, Greater Noida - 201310, Uttar Pradesh, India. ---------- ----------

(57) Abstract :
A surgical cutting instrument 100 is disclosed, including a pair of elongated members 102 pivotally coupled together to selectively move between an open position and a closed position relative to each other. Each elongated member 102 includes a cutting portion 104 and a shank portion 106. Each shank portion 106 includes a bore 118 and a plurality of first holes 110. The surgical cutting instrument 100 further includes a pair of handle members 114 configured with the respective shank portions 106 such that a portion of each handle member 114 is received in the bore 118 the respective shank portion 106. Each handle member 114 includes a second hole 120. A pair of locking means 124 are configured to removably engage with the respective first holes 110 of the shank portions 106 and the second holes 120 of the handle members 114 for locking the shank portion 106 with the handle members 114.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021324 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR KNOWLEDGE REPRESENTATION USING GEOMETRIC FLEXIBLE ADAPTABLE TEMPLATES BY USING MACHINE LEARNING INTERFACES

(51) International classification	:G06F0003048800, H04L0029080000, G06N0020000000, G06F0003048400, G06Q0030060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Sanjay Gour
Address of Applicant :Professor & Head, Department of Computer Science & Engineering, Jaipur Engineering College & Research Centre, Jaipur, Pin: -302022 ---------- ----------
2)Dr. Sandeep Vyas
3)Dr. Ashok Singh Shekhawat
4)Mr. Hemant Sahu
5)Dr. Rajeev Mathur
6)Dr. Chandikaditya Kumawat
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sanjay Gour
Address of Applicant :Professor & Head, Department of Computer Science & Engineering, Jaipur Engineering College & Research Centre, Jaipur, Pin: -302022 ---------- ----------
2)Dr. Sandeep Vyas
Address of Applicant :Professor & Head, Department of Electronics & Communication Engineering, Jaipur Engineering College & Research Centre, Jaipur, Pin: -302022 ---------- ----------
3)Dr. Ashok Singh Shekhawat
Address of Applicant :Professor, Department of Mathematics, Jaipur Engineering College & Research Centre, Jaipur, Pin: -302022 ---------- ----------
4)Mr. Hemant Sahu
Address of Applicant :Associate Professor, Department of Computer Science & Engineering, Geetanjali Institute of technical Studies, Udaipur, Pin: -313022 ---------- ----------
5)Dr. Rajeev Mathur
Address of Applicant :Professor & Director, School of Engineering and Technology, Jaipur National University, Jaipur, Pin: -312001 ---------- ----------
6)Dr. Chandikaditya Kumawat
Address of Applicant :Professor, Department of Computer Science, Mewar University, Chittorgarh, Pin: -312901 ---------- ----------

(57) Abstract :
The present invention discloses a system for Knowledge representation using geometric flexible adaptable templates by using machine learning interfaces. The system includes, but not limited to, at least one processor; at least one non-transitory computer readable storage medium storing instructions thereon, that, when executed by the at least one processor, cause the system to: a set of navigational points for defining and retrieving objects based for knowledge representation on a resource locator thereof through a machine learning based user interface; an object search engine for selecting a set of objects according to a user-defined content criterion using an adaptable plurality of templates and returning respective resource locators of selected objects, and further, employing a plurality of schemes for selecting objects.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021327 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A COMPACT ULTRA-WIDE-BAND MSRDRA

(51) International classification :H01Q0001380000, H01Q0009040000, H01Q0001500000, H04B0001716300, H01Q0001480000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Apeejay Stya University
Address of Applicant :Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Parikshit Vasisht
Address of Applicant :School of Engineering and Technology, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
2)Prof. Sudhakar Ranjan
Address of Applicant :School of Engineering and Technology, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
3)Dr. Neela Chattoraj
Address of Applicant :Department of Electronics and Communication Engg., Birla Institute of Technology,Ranchi ---------- ----------
4)Ravi Chandra
Address of Applicant :Department of Electronics and Communication Engg., Birla Institute of Technology,Ranchi ---------- ----------
5)Neha Rajak
Address of Applicant :Department of Electronics and Communication Engg., Birla Institute of Technology, Ranchi ---------- ----------
6)Dr. Atul Kathait
Address of Applicant :School of Biosciences, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------
7)Anuranjan Sharma
Address of Applicant :School of legal Studies, Apeejay Stya University, Sohna - Palwal Road, Sohna - 122103, Gurugram, Haryana ---------- ----------

(57) Abstract :
A compact ultra-wide-Band MSRDRA (1) comprising two segments of the rectangular ring (2) and rectangular notch-shaped dielectric resonators (3) including an alumina DR insert fed (4) with 50 O coaxial probe (5). MSRDRA (1) can be employed in high-speed LTE/ wireless applications, vehicular radar application systems, unmanned guided vehicles, UWB short-pulsed radars, robotics, and satellite applications. The invention is disclosing an MSRDRA (Multi-Segment Rectangular Dielectric Resonator Antenna), which is an excellent contender in a congregate of ultra wideband antennas. The antenna attains both X- and Ku bands completely (8 - 21GHz).

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021357 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IOT, ARTIFICIAL INTELLIGENCE BASED ON-LINE DEFECT RECOGNITION IN ADDITIVE MANUFACTURING USING IMAGE PROCESSING

(51) International classification :G06N0020000000, B33Y0010000000, B33Y0050020000, B22F0003105000, G06K0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr. Kuldeep Rawat
Address of Applicant :Asst professor Shivalik college of Engineering, PO, Shimla Bypass Road Shiniwala, Sherpur, Dehradun Pin : 248197 State : Uttarakhand Country : India ----------
2)Mr.Suganchand patel
3)Ms. Amrita Khera
4)Dr.S.Lakshmanaprakash
5)Mrs. Ryakala Deepika
6)Ms.Dipti Joshi
7)Dr. N Ramkumar
8)Mr. Yogesh Tanajirao Padwal
9)Dr. Badugu Suresh
10)Mrs. Chandra Veer Kunwar Ranawat
11)Mr.Raja Raju
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Kuldeep Rawat
Address of Applicant :Asst professor Shivalik college of Engineering, PO, Shimla Bypass Road Shiniwala, Sherpur, Dehradun Pin : 248197 State : Uttarakhand Country : India ----------
2)Mr.Suganchand patel
Address of Applicant :Assistant Professor Chandigarh University,NH-95 chandigarh ludhiana hwy,gharuan, Mohali Punjab State: Punjab Country: India ---------- ----------
3)Ms. Amrita Khera
Address of Applicant :Assistant Professor Trinity Institute of Technology and Research Bhopal MP India Pin: 462022 State: Madhya Pradesh County: India ---------- ----------
4)Dr.S.Lakshmanaprakash
Address of Applicant :Asst.Prof-II Bannari Amman Institute of Technology, Sathyamangalam Pin:6308401 State: Tamilnadu Country: India ---------- ----------
5)Mrs. Ryakala Deepika
Address of Applicant :Assistant Professor B V Raju Institute of Technology , Vishnupur , Narsapur, Dist: Medak Pin: 502313 State: Telangana Country: India ---------- ----------
6)Ms.Dipti Joshi
Address of Applicant :Assistant professor Department of Mathematics and Statistics, Faculty of Science and Technology Vishwakarma University, Pune Maharashtra Pin: 411048 State: Maharashtra Country: India ---------- ----------
7)Dr. N Ramkumar
Address of Applicant :Statistician Department of Community Medicine Dr.Chandramma Dayananda Sagar Institute of Medical Education and Research Bangalore Pin: 562121. State: Karnataka Country: India ---------- ----------
8)Mr. Yogesh Tanajirao Padwal
Address of Applicant :Assistant Professor Bhagwant Institute of Technology Barshi Pin: 413401 State: Maharashtra Country: India ---------- ----------
9)Dr. Badugu Suresh
Address of Applicant :Associate Professor Koneru Lakshmaiah Education Foundation Green Fields Vaddeswaram Guntur. Pin:522302 State: Andhra Pradesh. Country: India ---------- ----------
10)Mrs. Chandra Veer Kunwar Ranawat
Address of Applicant :Assistant Professor Aravali Institue of Technical Studies, Udaipur Pin :313001 State: Rajasthan Country: India ---------- ----------
11)Mr.Raja Raju
Address of Applicant :Assistant Lecturer, St.Joseph University in Tanzania, P.O.Box: 11007. Country: Tanzania ---------- ----------

(57) Abstract :
Laser powder bed fusion components used in safety-critical applications are not always of same quality. This is a major obstacle to their widespread acceptance. Additionally, the L-PBF process is highly complex, making it difficult and costly for those wishing to minimize errors to alter the process settings. Automatic problem-solving technologies, such as those based on machine learning (ML), have enabled the future application of real-time monitoring, facilitating the discovery of issues. This article discusses the most recent applications of machine learning (ML) for L-PBF process monitoring and control, as well as how they work. Each includes sensors and further information about how the L-PBF process signatures work. Before getting into these subjects, a brief overview of the procedure is presented. The next part will discuss some of the most often used machine learning approaches and algorithms in L-PBFs. The next section analyzes machine learning approaches for detecting L-PBF process difficulties. Machine learning technologies may be utilized in the near future to detect and repair errors in L-PBF operations. This demonstrates the practical application of these technologies in the near future.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021377 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WATER FILTRATION SYSTEM

(51) International classification	:C02F0001440000, C02F0001000000, G01F0023000000, B01D0045120000, B01D0061140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Abhishek Chakravorty
Address of Applicant :Assistant Professor, Department of Electrical Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Vrij Mohan Vidhyarthi
Address of Applicant :Assistant Professor, Department of Electrical Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
A water filtration system comprises of a reservoir 1 stores saline water, the reservoir 1 installed with level sensor 2 calculates level, a touch interactive display panel 3 mapped on reservoir 1 to enter purpose, a sensing module 23, 24, 25, 26 integrated within reservoir 1 and third chamber 10 determine TDS and pH value, a first chamber 4 installed with heating coil 5 heats water, a second chamber 7 linked with first chamber 4 accumulates vapours via motorized lid 8 embedded between first and second chamber 4, 7, an ECV 9 fitted on second chamber 7 for distributing vapours, a third chamber 10 mapped with filtration module 11 filters water, a water level sensor 12 installed within third chamber 10 detects level of condensed water, a primary electronic controlled nozzle 13 fixed within third chamber 10 dispenses minerals, the telescopic rods 15 configured with solar panel 16 absorbs sunlight.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021378 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SEED TREATMENT DEVICE

(51) International classification :A01C0001000000, H02K0015000000, A01C0007020000, F16H0057000000, F21S0008020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mridulata Pant
Address of Applicant :Assistant Professor, Department of Agriculture, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
The present invention relates to a seed treatment device comprising, a semi-circular frame 1 configured with a cylindrical chamber 2 adapted to store multiple seeds to be treated and rotates on its axis during the treatment, a first and second electronic valve 4, 5 for dispensing color and fungicides over the seeds during the rotation, a base 8 installed with a motorized pinion gear arrangement 9 and meshed with multiple teeth fabricated at outer periphery of the frame 1 to provide oscillatory translation to the frame 1 to assist in proper mixing of the dispensed color and fungicides with the seeds and a pair of rigid bars 10 having a first end positioned on the base 8 and a second end is linked to the chamber 2 via a motorized bearing for supporting the chamber 2 for increasing shelf-life and crop productivity by sowing the seeds.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021379 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADJUSTABLE SOIL SEGREGATION DEVICE

(51) International classification :B09C0001080000, G01N0033240000, C02F0001400000, F24C0015160000, G01N0015000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Sandip Vijay
Address of Applicant :Professor, Department of Electronics and Communication Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Dr Raghav Garg
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
An adjustable soil segregation device includes a housing 1 supported with legs 2 positioned on surface, first portion 3 of housing 1 is installed with a chamber 4 poured with soil mixture and other entities, a lid 5 attached with chamber 4 for dispensing mixture in housing 1, a mesh structure 6 constructed by multiple lateral and longitudinal rods 8 for segregating soil and entities, wherein end portions of rods 8 are attached with housing 1 via a sliding rack 9, a motorized slider 10 for translating rods 8 towards/away from each other for regulating grid size of mesh structure 6, an imaging unit 11 for capturing soil's images to determine size, type of entities present within mixture, a set of telescopic rods 12 having attached spatulas 13 at end for blending the mixture to allow segregation of soil, a moisture sensor that determines moisture content within mixture of soil.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SHRUB SHAPE MAINTENANCE DEVICE

(51) International classification	:A61F0002300000, G06K0009220000, G06T0011600000, G01N0033000000, B82Y0010000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Prerana Badoni
Address of Applicant :Assistant Professor, Department of Agriculture, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
The present invention relates to a shrub shape maintenance device comprising of an expandible circular frame 1 utilized to be positioned over a portion of a shrub within a confined area, multiple telescopically operated wheels 2 for maneuvering of the frame 1 to different places, plurality of telescopic rods 3 for forming a dome shaped grid like patterns in order to allow the shrubs to expand and grow within the defined area, a computing unit for giving access to a user to input commands regarding various parameters such as shape, size, density of the shrub required to be grown, an artificial intelligence image capturing module 4 in association with the sensing module 5 for continuously monitoring growth of the shrub, a sliding rack 7 configured with a telescopic cutter 8 for trimming the foliage and twigs of the shrub and thereby providing the user-desired shape of shrub to the user.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2022

(21) Application No.202211021381 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CROP MAINTENANCE DEVICE

(51) International classification	:G01N0033483000, A01M0007000000, E03D0009030000, B33Y0040000000, G07F0013060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Bhawana Gahtori
Address of Applicant :Assistant Professor, Department of Agriculture, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
A crop maintenance device includes a housing 1 constructed with caterpillar wheels 2 for maneuvering housing 1, an image-capturing module 3 coordinated with a sensing-module 4 for detecting crop type, soil-conditions, weather-conditions and disease's type to determine type/amount of chemicals to dispensed over crop, chambers 5 for storing chemicals and configured with valves 6 to dispense determined type and amount of chemicals and suggest on a linked user's computing-unit, a container 7 linked to chambers 5 via conduits 8 to collect dispensed chemicals and mix using a stirrer 9, an nozzle 10 configured with container 7 to dispense chemicals over crop/soil, a slider 11 fabricated at outer wall of housing 1 to enable translation of container 7 while dispensing chemicals, a reservoir mapped with grinder 12 to grind humus collected within reservoir to convert into a compost which is then spread over soil via a blade 13.

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021390 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CONJUGATED NANOPARTICLES AS ANTHRAX VACCINE

(51) International classification :C07K0014320000, A61K0039070000, B82Y0030000000, A61K0033380000, C07K0016120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Graphic Era (Deemed to Be University)
Address of Applicant :566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. VINAY KUMAR
Address of Applicant :Department of Biotechnology, 566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
2)Dr. MANU PANT
Address of Applicant :Department of Life Sciences , 566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------
3)Dr. S. M. WAHEED
Address of Applicant :Department of Biotechnology, 566/6, Bell Road, Clement Town, Dehradun – 248002, Uttarakhand, India ---------- ----------

(57) Abstract :
The present invention relates to a conjugated nanoparticles comprising plant-based silver nanoparticles conjugated to a recombinantly expressed protective antigen (PA) domain four (PA-D4) of Bacillus anthracis. The conjugated nanoparticles comprises the recombinantly expressed protective antigen (PA) domain four (PA-D4) which is obtained from Bacillus anthracis and it conjugated with said plant-based silver nanoparticles using N-terminal crosslinking agent, N- Hydroxysuccinimide. The conjugated nanoparticles of the present invention are capable of binding with the anthrax infection and killing the anthrax. A method of production of conjugated nanoparticles comprising plant-based silver nanoparticles conjugated to a recombinantly expressed protective antigen (PA) domain four (PA-D4) of Bacillus anthracis is also disclosed.

No. of Pages : 41 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021394 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NEURAL NETWORK-BASED SYSTEM FOR DIAGNOSTICS OF ASTHMA

(51) International classification :G01N0027120000, G01N0033000000, G06N0003080000, A61B0005000000, A61B0005097000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Anil Kumar
Address of Applicant :Professor, Department of Electrical Engineering, SET, IFTM University Moradabad, UP 244001 ---------- ----------
2)Mr. Ankur Chahal
3)Dr.Devendra Singh
4)Dr.Intezar Mahdi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Anil Kumar
Address of Applicant :Professor, Department of Electrical Engineering, SET, IFTM University Moradabad, UP 244001 ---------- ----------
2)Mr. Ankur Chahal
Address of Applicant :Assistant Professor, Department of Electronics and Commnication Engineering, SET, IFTM University Moradabad, UP 244001 ---------- ----------
3)Dr.Devendra Singh
Address of Applicant :Associate Professor, Department of Computer science and Applications Engineering, SSCA, IFTM University Moradabad, UP 244001 ---------- ----------
4)Dr.Intezar Mahdi
Address of Applicant :Professor, Department of Mechanical Engineering, SET, IFTM University Moradabad, UP 244001 ---------- ----------

(57) Abstract :
The present invention provides a system for a neural network-based diagnostics of asthma. The system is comprised of, but not limited to, an array consisting of five semiconductor gas sensors; a neural network using a backpropagation algorithm for detection. After the results, the present model ensures the proper accuracy and consistent results. Further, the sensor array along with the data acquisition system is developed for the non-invasive detection of asthma; five data sets of asthma-related toxic gas in different concentrations are obtained by a signal acquirement system having a tin oxide gas sensor array; wherein obtained data are put for training and analysis on Artificial Neural Network (ANN). Furthermore, the outcomes show good classification of asthma-associated exhaled toxic gas with the ambient air using only a few samples and also present the efficiency of Feedforward Back Propagation Neural Network on the data-driven from different gas sensors.

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021398 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COURIER MANAGEMENT SYSTEM

(51) International classification	:A47G0029140000, G07F0017120000, G08B0021240000, B65D0081133000, C08K0005151500
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sunil Semwal
Address of Applicant :Associate Professor, Department of Electronics and Communication Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Piyush Dhuliya
Address of Applicant :Assistant Professor, Department of Electronics and Communication Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
3)Dr. Tripuresh joshi
Address of Applicant :Assistant Professor, Department of Electronics and Communication Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
A courier management system comprising a body 1 mapped with multiple chambers 4 designated for storing an item to be parceled, an extendible panel 6 for placing the item within the specific chamber 4, an image capturing module 7 for detecting dimensions of the item and font size of the address, a speaker 16 for notifying the user about altered font size, a microphone 8 for inputting user's voice command regarding the address, an x-ray imaging unit 11 for detecting fragile and susceptible items, a display panel 12 for displaying regarding susceptible item and wrapping cost in case of fragile item, an inkjet printing unit 9 for printing the address and a specific mark on the packet in accordance to fragility and susceptibility of the item to alert concerned authorities and a finger print sensor 13 for verifying the concerned authorities to collect and parcel the item.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021399 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUTOMATED SEEDBED PREPARATION SYSTEM

(51) International classification :B25J0019020000, B29C0033000000, B25J0018020000, G01N0001280000, G08G0001096200
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Pankaj Singh Negi
Address of Applicant :Assistant Professor, Department of Agriculture and Forestry, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Anikesh Sharma
Address of Applicant :Assistant Professor, Department of Agriculture and Forestry, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
An automated seedbed preparation system that consists of a body 1 fitted over motorized wheels 2 for maneuvering, cultivating unit 4 mounted at the right portion of the system via pneumatically operated links 5 which insert the unit within the soil, while a left portion consists of a plate 6 connected to a hydraulic piston 8 coupled with U-shape flap 9 at each corner of the plate 6 via primary and secondary sliding rack 10, an artificial intelligence-based image capturing module 3 is mounted over the body 1 to capture the maneuvering path of the system, a primary ultrasonic sensor 11 positioned over plate 6 assist the operating of hydraulic piston 8 and secondary ultrasonic sensor 15 assists to the operation of the wheel 2, a toothed shaft is connected with plate 6 through the telescopic rod 13 and adjust in accordance with the need of the user.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021400 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BALANCE TRAINING AMUSEMENT DEVICE

(51) International classification	:A63B0026000000, F16M0011180000, A63B0071060000, A63B0022160000, F16M0011040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Sandip Vijay
Address of Applicant :Professor and Director, Department of Electronics and Communication Engineering and Electrical and Electronics Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
A balance training amusement device includes a platform 1 installed with telescopic poles 2 attached with multiple rings 3 arranged in a concentric manner and attached in between poles 2 in a way that, innermost ring 3 of all rings 3 is occupied by a user to maintain balance during tilting of rings 3, a motorized ball and socket joint 4 for tilting rings 3 at different angles for altering difficulty level during maintenance of balance, a frame 5 installed with a telescopic stand 6 positioned at innermost ring 3 such that frame 5 is held by user during tilting to maintain, balance and extends/retracts stand 6 according to user's height determined by an image capturing module 7 installed on frame 1, a display panel 8 for selecting a difficulty level, a holographic projector 9 for projecting real time postures of user on platform 1 during tilting of rings 3.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021401 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AGRICULTURAL TILLAGE DEVICE

(51) International classification	:A01B0049020000, A01B0049060000, C12M0001320000, A01B0051040000, A01B0035100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Sandip Vijay
Address of Applicant :Professor and Director, Department of Electronics and Communication Engineering and Electrical and Electronics Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Dr Raghav Garg
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
The present invention relates to an agricultural tillage device comprising, a frame 1 installed with caterpillar wheels 2 for maneuvering the frame 1 over a farmland, an image capturing module 3 for determining dimensions of the farmland, a touch interactive display panel 4 that enables a user for selecting type of crops to be grown, a motorized cylindrical shaped roller 5 in order to level soil surface and prepare rows for tillage purpose, plurality of motorized V-shaped sharpened blades 6 in order to penetrate inside the soil for sowing seeds inside the soil, a motorized iris operated lid 9 for allowing dispensing of seeds via an internal duct and a solenoid operated hammering unit 10 for crushing any obstacles detected by the module 3 in synchronization with an ultrasonic sensor to aid in smooth maneuvering of the frame 1 over the farmland.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2022

(21) Application No.202211021402 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PLANT GROWTH MANAGEMENT DEVICE

(51) International classification	:G01D0011240000, A01G0009020000, A01G0027000000, A01G0025160000, G01N0027220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Tula's Institute
Address of Applicant :Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Prabhat Kumar
Address of Applicant :Co-Ordinator and Assistant Professor Department of Agriculture, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------
2)Dr. Prerana Badoni
Address of Applicant :Assistant Professor, Department of Agriculture, Tula's Institute, Chakrata Road, Dhoolkot, Selaqui, Dehradun, Uttarkhand 248197, India. ---------- ----------

(57) Abstract :
The present invention relates to a plant growth management device comprising a casing 1 arranged with flaps 2 encasing root and stem portion of a plant to regulate exposure of the plant to sunlight or rainfall, a moisture sensor integrated within the casing 1 for determining moisture level of the soil, a chamber 3 integrated with a nozzle 4 for dispensing of water into the soil, a sensing module 12, 13 fabricated on the casing 1 for determining high intensity of sunlight and rainfall, a pair of telescopic rod 6 integrated with a shade arrangement 7 for encasing the plant in case of excessive sunlight and rainfall as determined by an image capturing module 5 arranged on the casing 1, an ultrasonic sensor 14 fabricated on the casing 1 for detecting presence of unnecessary herbs/shrubs/weeds and a motorized blade 10 integrated on the casing 1 for trimming/cutting the determined herbs/shrubs/weeds.

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2022

(21) Application No.202211021426 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR RESOURCE OPTIMIZATION AND MANAGEMENT IN A CLOSED ENVIRONMENT.

(51) International classification	:H04L0029060000, G06F0021620000, G06Q0010100000, H04W0012080000, G06F0011200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr Savita Mohan
Address of Applicant :(Professor & Principal, GNIOT Institute of Professional Studies) T-2, 701, Parsvanath Panorama, Near Phi 3 Golchakkar, Sector Tau, Greater Noida-201308 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. SAVITA MOHAN
Address of Applicant :(Professor & Principal, GNIOT Institute of Professional Studies) T-2, 701, Parsvanath Panorama, Near Phi 3 Golchakkar, Sector Tau, Greater Noida-201308 ---------- ----------
2)DR. AVIJIT KUMAR DEY
Address of Applicant :Gr Noida, India ---------- ----------
3)DR. HIMANSHU MITTAL
Address of Applicant :Gr Noida, India ---------- ----------
4)DR. VIJEYATA TEGWAL
Address of Applicant :Greater Noida, India ---------- ----------
5)PROF. TARU MAHESHWARI
Address of Applicant :Greater Noida, India ---------- ----------
6)PROF. PIYUSH KUMAR
Address of Applicant :Greater Noida ---------- ----------
7)PROF. HIMANI CHAUDHARY
Address of Applicant :Greater Noida, India ---------- ----------
8)PROF. RITU YADAV
Address of Applicant :Greater Noida, India ---------- ----------
9)PROF. DEEPIKA VARSHNEY
Address of Applicant :Greater Noida, India ---------- ----------
10)PROF. SWETHA WAHI
Address of Applicant :Greater Noida, ---------- ----------

(57) Abstract :
Employment role data, trust data, and special permissions data, associated with a party is automatically obtained and/or monitored. The employment role data associated with the party, the trust data associated with the party, and the special permissions data associated with the party, is then analyzed to determine a set of allowed access permissions data to be associated with the party, the set of allowed access permissions data providing the party access to one or more resources. It is then either recommended that the set of allowed access permissions data be provided to the party, or the set of allowed access permissions data is automatically provided to the party.

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/02/2021

(21) Application No.202121005232 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SNAKE BITE PREVENTION SHOES

(51) International classification :A61K0035583000, A61K0008980000, B08B0009045000, B25J0009060000, E03F0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)MATHEW ZAKARAIAHS
Address of Applicant :A-302, EVENING STAR, RAHEJA VIHAR COMPLEX, CHANDIVALI, MUMBAI-400 072, MAHARASHTRA,INDIA. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MATHEW ZAKARAIAHS
Address of Applicant :A-302, EVENING STAR, RAHEJA VIHAR COMPLEX, CHANDIVALI, MUMBAI-400 072, MAHARASHTRA,INDIA. ---------- ----------

(57) Abstract :
The Present invention relates generally to a snake bite prevention shoe. More specifically, the present invention provides an air ventilating shoe/boot for farmer's safety to be use in a paddy field or in wild forest area to avoid snake bite, and preventing a water, mud or insects entering in it. Further, the present invention shoe is also providing an air ventilation to foot. A snake bite prevention shoe (100) comprising of seamless shoe body (1), air inlet pipe (11), a safety strip (7), an air outlets (3), protection flap (5), an electric strip (8), battery (8), bottom sole (2), inner sole (9), and an air sac (13) configured with an air inlet pipe (11). The present invention provides a comfortably knee length shoe as it is light weight and without sweating as provided with a mechanism for circulation of air within the shoes and protective strip to avoid entry of insect inside the shoe. Figure no. 2

Figure No. 1

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/03/2021

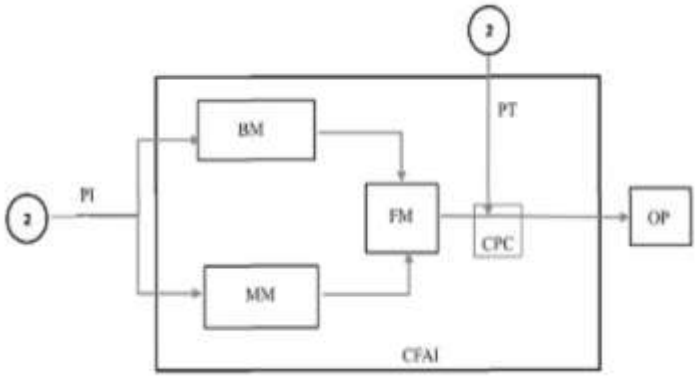
(21) Application No.202121011020 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR COUNTERFEIT DETECTION

(51) International classification :G06N0003040000, G06Q0030000000, G06N0003080000, G07D0007120000, G06F0040300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DIMENSIONLESS TECHNOLOGIES PRIVATE LIMITED
Address of Applicant :B 303, SAI SILICON VALLEY, BALEWADI, PUNE - 411057, MAHARASHTRA, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)HIMANSHU ARORA
Address of Applicant :A 1103, TULSI GAGAN APT., SECTOR 21, KHARGHAR, NAVI MUMBAI 410210, MAHARASHTRA, INDIA ---------- ----------

(57) Abstract :
ABSTRACT SYSTEMS AND METHODS FOR COUNTERFEIT DETECTION A system for counterfeit detection, said system comprising: a data acquisition module (DAM) configured to capture product data (PD); a client node (CN) configured to fetch product description (PD); a data preprocessing module (DPM) comprising at least an NLP (Natural Language Processing) sub-module (NLPM) and at least an image processing module (IPM), said data preprocessing module (DPM) configured to process said data into at least processed 'determined' text (PT) and at least processed images (PI); a counterfeit detection module (CFAI) configured to receive said processed 'determined' text (PT) and said processed images (PI) in order to determine 'type' and 'label' of said product. [[FIGURE 6]]



No. of Pages : 41 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2021

(21) Application No.202121015614 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : 3D SPONGES CONTAINING POLYVINYL ALCOHOL-SODIUM ALGINATE-GREEN TEA EXTRACT-ALOE VERA EXTRACT

(51) International classification :A61K0009000000, C08B0037000000, C08L0033020000, A23F0003340000, A61K0031198000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
Address of Applicant :Powai, Mumbai – 400076, Maharashtra, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SRIVASTAVA, Rohit
Address of Applicant :NanoBios Lab, Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai – 400076, Maharashtra, India ---------- ----------
2)KHAN, Amreen
Address of Applicant :NanoBios Lab, Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai – 400076, Maharashtra, India ---------- ----------
3)MEENA, Rajendra Prasad
Address of Applicant :NanoBios Lab, Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai – 400076, Maharashtra, India ---------- ----------
4)PAWAR, Vaishali Pundalik
Address of Applicant :NanoBios Lab, Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai – 400076, Maharashtra, India ---------- ----------

(57) Abstract :
Provided herein is a 3D sponge or scaffold comprising Poly Vinyl alcohol, sodium alginate, green tea extract, and aloe vera. The 3D sponge is biocompatible, non-toxic, and stable and can be used as drug and diagnostic delivery agent. The biocompatible 3D sponge also shows enhanced antioxidant activity. Also provided herein is a process for synthesis of the biocompatible 3D sponge.

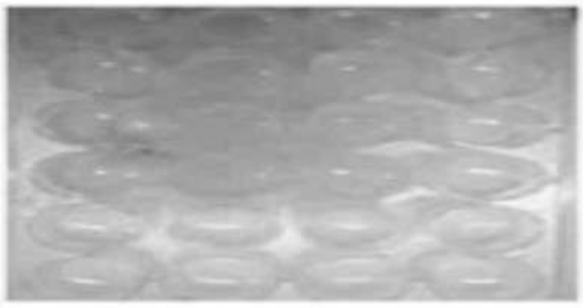


Figure 1

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/04/2021

(21) Application No.202121018108 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ALPHA-SYNUCLEIN MUTANTS AND USES THEREOF

(51) International classification :A61K0031519000, C12N0009020000, C07D0413140000, A61K0048000000, C07K0001113000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Indian Institute of Technology - Bombay
Address of Applicant :IIT – Bombay, Powai, Mumbai, Maharashtra, India - 400076 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Samir K. Maji
Address of Applicant :Lab.No. 305, Protein Engineering and Neurobiology Lab, Department of Biosciences and Bioengineering, IIT Bombay Mumbai, Maharashtra, India - 400076 ---------- ----------
2)Gadhe Laxmikant Ganeshrao
Address of Applicant :Lab.No. 305, Protein Engineering and Neurobiology Lab, Department of Biosciences and Bioengineering, IIT Bombay Mumbai, Maharashtra, India - 400076 ---------- ----------
3)RAKESH KUMAR
Address of Applicant :Lab.No. 305, Protein Engineering and Neurobiology Lab, Department of Biosciences and Bioengineering, IIT Bombay Mumbai, Maharashtra, India - 400076 ---------- ----------
4)SOUMIK RAY
Address of Applicant :Lab.No. 305, Protein Engineering and Neurobiology Lab, Department of Biosciences and Bioengineering, IIT Bombay Mumbai, Maharashtra, India - 400076 ---------- ----------

(57) Abstract :

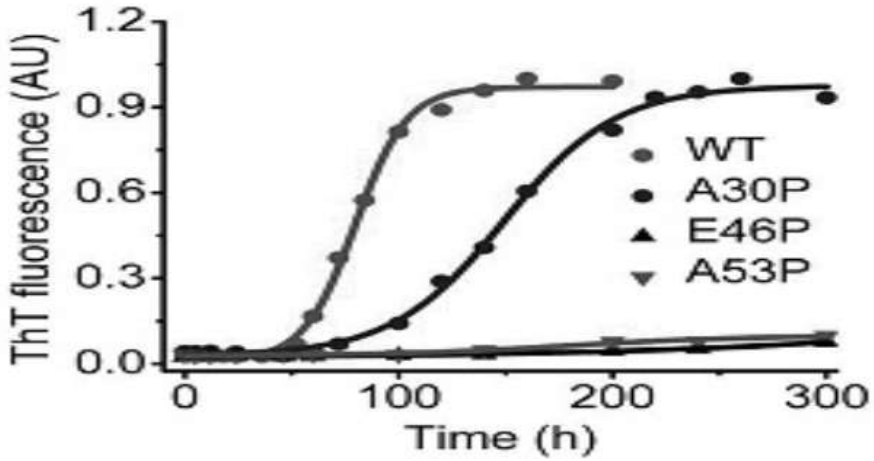


Fig. 1A

No. of Pages : 0 No. of Claims : 0

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/10/2021

(21) Application No.202121047385 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SEMICONDUCTOR AIR FILTER

(51) International classification :B01D0046000000, F02M0035024000, B01D0046240000, F02M0035020000, B01D0046520000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SMITH PHARMACEUTICALS
Address of Applicant :BLOCK NO. 309, 3RD FLOOR NIT SANKUL, BEHIND MORBHAVAN BUS STOP, VARIETY SQUARE, NAGPUR 440012 MAHARASHTRA INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)PRAFUL WAHADUDE
Address of Applicant :BLOCK NO. 309, 3RD FLOOR NIT SANKUL, BEHIND MORBHAVAN BUS STOP, VARIETY SQUARE, NAGPUR-440012 MAHARASHTRA INDIA ---------- ----------

(57) Abstract :
A semiconductor air filter is provided in the present embodiment. The filter consist of an ionization plate structure 108 having a rectangular with a multiple ionization plates 109 which discharges disinfected air in surrounding and a triangular shaped protrusion 109A on inside portion of the plates 109, an outer case 104 accommodating an ionization plate structure 108, wherein the structure 108 is fixed on the outer case with a screw 109B, an aluminum thin wire layer 102 having multiple fine perforation to trap micro particles from the air, a through hole channel 106 consisting of multiple holes in the range 110 to 170 for the air to pass through and disintegrate the particulate matter and a discharge ionization plate 110 having a multiple ionization plates 111 and a triangular shaped protrusion 111A on inside portion of the plates 111, wherein the discharge ionization plates is fixed on the through hole channel 106 with a screw 111B.

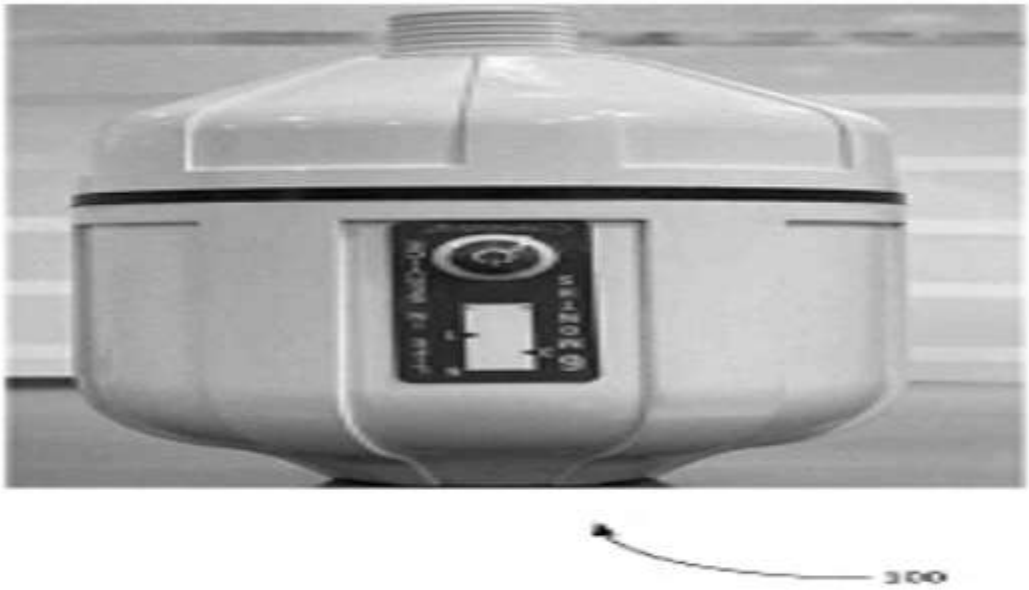


FIG. 1

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/12/2021

(21) Application No.202121062313 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A BIPED ROBOT FOR CLIMBING STAIRCASE

(51) International classification :B62D0057032000, B62D0057020000, B25J0011000000, B62D0057024000, G01P0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)REHPADE, Nita D.
Address of Applicant :Yeshwantrao Chavan College of Engineering, Hingna Rd, Wanadongri ct, Nagpur, Maharashtra, India - 441110 ---------- ----------
2)PAWAR, Mahesh S.
3)THOOL, Saket
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)REHPADE, Nita D.
Address of Applicant :Yeshwantrao Chavan College of Engineering, Hingna Rd, Wanadongri ct, Nagpur, Maharashtra, India - 441110 ---------- ----------
2)PAWAR, Mahesh S.
Address of Applicant :Yeshwantrao Chavan College of Engineering, Hingna Rd, Wanadongri ct, Nagpur, Maharashtra, India - 441110 ---------- ----------
3)THOOL, Saket
Address of Applicant :Yeshwantrao Chavan College of Engineering, Hingna Rd, Wanadongri ct, Nagpur, Maharashtra, India - 441110 ---------- ----------

(57) Abstract :
A BIPED ROBOT FOR CLIMBING STAIRCASE The present invention relates to a biped robot for climbing staircase. The present invention relates to a biped robot for climbing staircase. The object of the proposed invention is to provide a biped robot with the capabilities to climb on the staircases as well as on the unknown surfaces.The proposed system is designed to generate walking patterns with desired stable margin and walking speed. Along with the speed variation, the present system incorporating 10-Degree of Freedom to provide better stability. It presents a human like walking pattern for the feet and the hips to achieve smooth and efficient walking. The biped walking robot have been implemented with servomotors (107) and controlled by microcontroller (100). Following invention is described in detail with the help of Figure 1 of sheet 1 illustrates block diagram of the proposed biped robot.

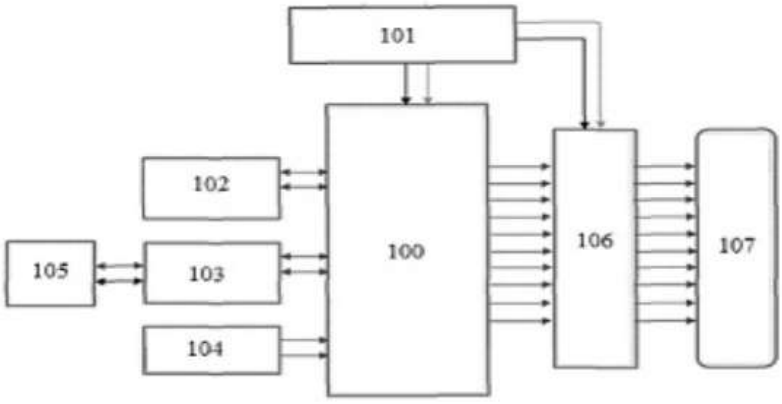


Figure 1

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/11/2021

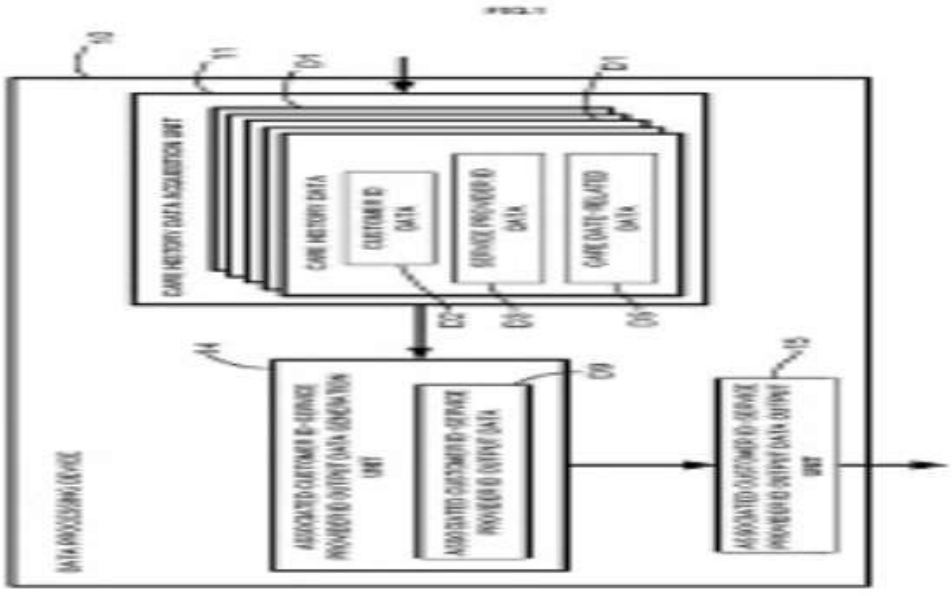
(21) Application No.202127052988 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DATA PROCESSING METHOD FOR OUTPUTTING DATA TO BE USED TO MATCH CUSTOMER WITH SERVICE PROVIDER AND DATA PROCESSING DEVICE FOR OUTPUTTING DATA TO BE USED TO MATCH CUSTOMER WITH SERVICE PROVIDER AND PROGRAM

(51) International classification	:G06Q0030020000, G01M0013040000, H03K0003037000, B29D0030300000, H04N0013122000
(31) Priority Document No	:PCT/JP2019/017809
(32) Priority Date	:25/04/2019
(33) Name of priority country	:----------
(86) International Application No Filing Date	:PCT/JP2020/017464 :23/04/2020
(87) International Publication No	:WO 2020/218406
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)YAMAHA HATSUDOKI KABUSHIKI KAISHA
Address of Applicant :2500 Shingai, Iwata-shi, Shizuoka 4388501 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)OGAWA, Hirokatsu
Address of Applicant :c/o Yamaha Hatsudoki Kabushiki Kaisha, 2500 Shingai, Iwata-shi, Shizuoka 4388501 ---------- ----------
2)NAKAYAMA, Yasuo
Address of Applicant :c/o Yamaha Hatsudoki Kabushiki Kaisha, 2500 Shingai, Iwata-shi, Shizuoka 4388501 ---------- ----------
3)NAKAO, Hiroshi
Address of Applicant :c/o Yamaha Hatsudoki Kabushiki Kaisha, 2500 Shingai, Iwata-shi, Shizuoka 4388501 ---------- ----------
4)KANEMOTO, Takumi
Address of Applicant :c/o Yamaha Hatsudoki Kabushiki Kaisha, 2500 Shingai, Iwata-shi, Shizuoka 4388501 ---------- ----------

(57) Abstract :
Provided is a data processing method and a data processing device that are capable of acquiring versatile data reflecting the preference of potential customers while ensuring the flexibility of design of hardware resources, and that output data to be used for matching a customer and a servicer. The data processing method according to one embodiment of the present invention outputs data to be used for matching a customer and a servicer. The data processing method comprises: a step for acquiring a plurality of pieces of care history data of high frequent tendency within four months; a step for generating customer ID and servicer ID associating output data; and a step for outputting the generated customer ID and servicer ID associating output data.



No. of Pages : 34 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/01/2022
(21) Application No.202221002373 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYNERGISTIC HERBICIDE COMPOSITIONS WITH TRANSPLANT SHOCK RECOVERY ADJUVANT

(51) International classification :A01N0033180000, A01N0037220000, A23K0010300000, C12N0009020000, A61K0008490000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BIOSTADT INDIA LIMITED
Address of Applicant :Poonam Chamber, `A` Wing, Dr. Annie Besant Rd., Worli, Mumbai - 400018, Maharashtra, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Juzar Saifuddin Khorakiwala
Address of Applicant :Sahil Bunglow No. 2, 2nd Floor, Dr A. B. Road, Worli, Samandar Point (Near Eden Hall), Mumbai-400018, Maharashtra, India ---------- ----------
2)Huzefa Juzar Khorakiwala
Address of Applicant :Sahil Bunglow No. 2, 2nd Floor, Dr A. B. Road, Worli, Samandar Point (Near Eden Hall), Mumbai-400018, Maharashtra, India ---------- ----------
3)Hanif Sayyadnoor Sayyad
Address of Applicant :E-502,Samruddhi, S.No-42, Handewdi Road, Hadapsar, Pune - 411028, Maharashtra, India ---------- ----------
4)Ramchandra Dhondiram Gaikwad
Address of Applicant :Gaikwad Niwas, H No- E-83, Millat Nagar, Behind Sohel Dhaba, Near S S Margol College, Shahbad, Karnataka-585 228, India ---------- ----------
5)Sushil Kumar
Address of Applicant :S/o Shri Vishnu Dutt, Row House No.1, Plot No. 5, Mango Woods Twins, Near Mohini Patanjali Shop, Gut No. 83, Deolai, Road, Aurangabad, Maharashtra-431010, India ---------- ----------

(57) Abstract :
Provided herein is a plant protection composition. The plant protection composition comprises pretilachlor, pendimethalin, and an herbicide selected from an Amino acid inhibitor or a protoporphyrinogen oxidase (PPO) inhibitor. The composition optionally contains a mixture comprising linear copolymeric polysaccharides obtained from Phaeophyceae or Ascophyllum nodosum. The present invention also provides a method of preparing a plant protection composition. In this method, pretilachlor, pendimethalin, an herbicide and adjuvant(s) are mixed to obtain a premix. To this premix, water is added to obtain a blend.

No. of Pages : 60 No. of Claims : 29

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/01/2022

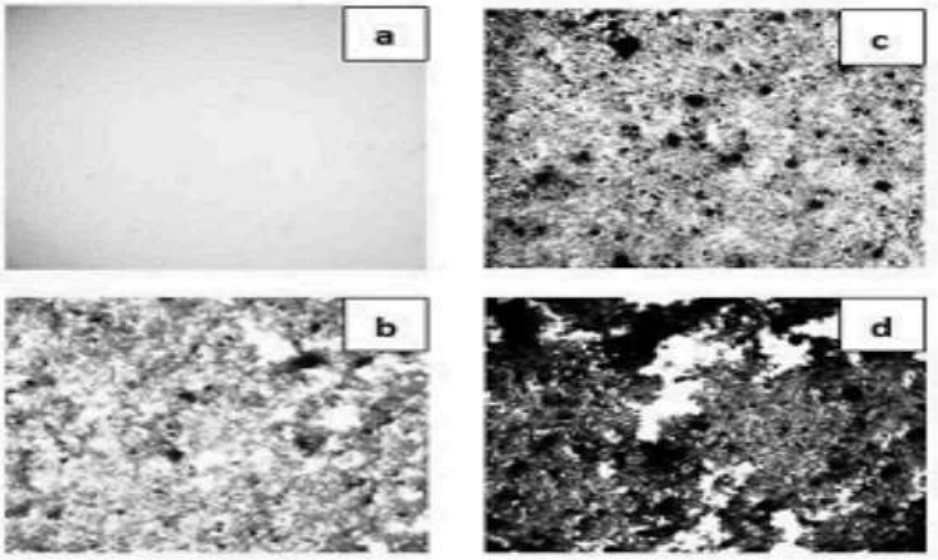
(21) Application No.202221003379 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYNTHESIS AND STUDYING THE OPTICAL PARAMETERS OF POLYVINYL PYRROLIDONE/SIC NANOPARTICLES

(51) International classification	:G02B0001100000, C08L0039060000, B82Y0030000000, G01N0021410000, C08K0007240000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chobe Santosh Subhash
Address of Applicant :Assistant Professor in Chemistry, MGVs L.V.H.College, Panchavati, Nashik, Maharastra ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Chobe Santosh Subhash
Address of Applicant :Assistant Professor in Chemistry, MGVs L.V.H.College, Panchavati, Nashik, Maharastra ---------- ----------

(57) Abstract :
Synthesis and studying the optical parameters of polyvinyl Pyrrolidone/sic nanoparticles Abstract: When carborundum nanoparticles were combined with polyvinylpyrrolidone (PVP) in various concentrations (2, 4, and 6), visible films (pvp-sic) were formed on glass slides. According to tests, as the weight ratio increases, the optical parameters (absorbance, absorption coefficient, reflectivity, refractive index, and extinction - real-imaginary dielectric constant) improve. This is true for Nano-Sic as well as PVP-Sic (Vis. and Infr. Region). This is accomplished through the addition of weight to nanoparticles. As a result, the energy band gap will be reduced to less than (3.7 ev) (2.8 ev). They can now be used in lasers and other optical devices as a result (LED lights, optical devices and display screens). PVA–PEO–CuO nanocomposites were synthesised and their structure and optical properties were investigated as part of the research. They could be used to determine the relative humidity. The developed humidity sensors outperform other humidity sensors in terms of weight, cost, flexibility, and sensitivity. The results of the tests indicate that the nanocomposites absorb a significant amount of ultraviolet light. When a (PVA–PEO) blend is combined with additional CuO nanoparticles, it absorbs more light. This mixture may be beneficial in the fabrication of solar cells, transistors, diodes, and other electrical devices. As the concentration of CuO nanoparticles increases, the optical constants and energy gap decrease. Due to the high sensitivity of (PVA-PEO-CuO) nanocomposites containing varying concentrations of copper oxide nanoparticles, they have the potential to be used as sensors for a wide range of humidity levels.



No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/01/2022

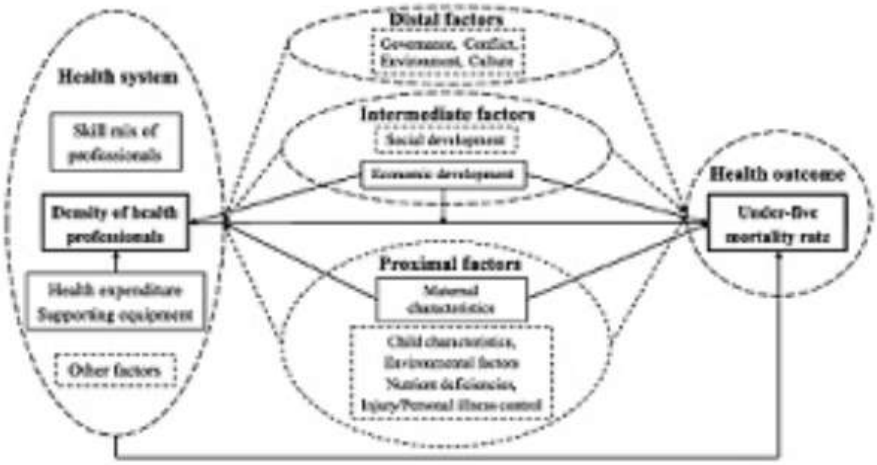
(21) Application No.202221003380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THE IMPORTANCE OF NURSES IN PREVENTING INFANT AND UNDER-5 YEAR CHILD MORTALITY

(51) International classification :G06Q0030000000, G06Q0050200000, G06Q0010100000, G16H0010200000, G16H0050300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Sudharani B Banappagoudar
Address of Applicant :Professor, Obstetrics and Gynaecological Nursing, School of Nursing Science, ITM University, Gwalior-475001, Madhya Pradesh ---------- ----------
2)Dr. Vasanthakumari Sundararajan
3)Dr. Anu Gauba
4)Dr AnasuyaPattanayak
5)Mrs Soumya Sonalika
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sudharani B Banappagoudar
Address of Applicant :Professor, Obstetrics and Gynaecological Nursing, School of Nursing Science, ITM University, Gwalior-475001, Madhya Pradesh ---------- ----------
2)Dr. Vasanthakumari Sundararajan
Address of Applicant :Associate Professor in Pediatric Nursing, Pediatric and Neonatal Nursing , Institute of Health Sciences, Wollega University , East Oromia, Ethiopia, Nekemte-395 ---------- ----------
3)Dr. Anu Gauba
Address of Applicant :Professor, Department of Nursing, Amity college of Nursing, Amity University , Gurgaon, -122413, Haryana ---------- ----------
4)Dr AnasuyaPattanayak
Address of Applicant :Professor, Community health Nursing, Institute of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar751024, Odisha ---------- ----------
5)Mrs Soumya Sonalika
Address of Applicant :Assistant Professor, Community health Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar-751024, Odisha ---------- ---------- ------

(57) Abstract :
The Importance of Nurses in Preventing Infant and Under-5 year child Mortality Abstract: 6.3 million Children died before they reached the age of five in 2013. This is unconscionable. It has been determined that nurses are the most effective at preventing these deaths. The specific objective of this study is to investigate and determine how nurses can help prevent and reduce infant and child mortality. According to the study's authors, the study's primary objective was to gather research-based information about how nurses are positioned during a child's death. Additionally, we gathered data for this study using the search engines PubMed and Science Direct. Significant research was conducted between 2000 and 2015. All research considered for publication took place between 2000 and 2015. We thoroughly examined the data for this study, which came from nine different sources. Inductive content analysis was used to examine the data. The findings indicate that nurses face numerous obstacles when attempting to reduce or eliminate these preventable deaths. Nurses face numerous obstacles, including a scarcity of resources, a high rate of maternal mortality, and inadequate education. Additionally, other issues were discovered. According to those who reviewed the findings, nurses already play a significant role in reducing child mortality under the age of five, but they believe nurses should play an even larger role. Nurses in developing countries may be able to improve their performance by implementing the study's findings. As a result of these concerns, it is critical to investigate potential solutions and conduct a study that is unbiased toward nurses.



No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/01/2022

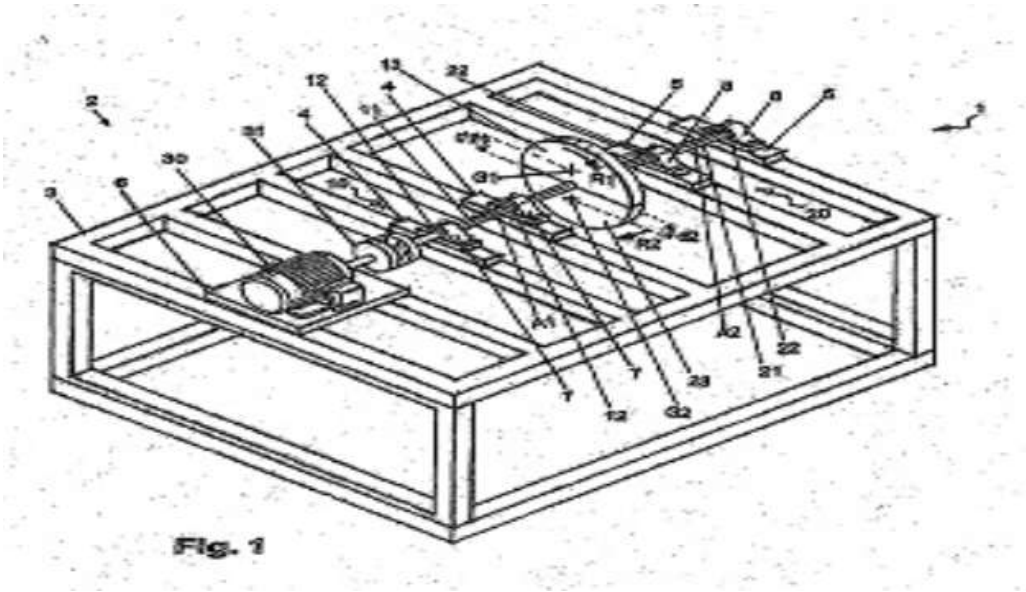
(21) Application No.202221003797 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM FOR THE CONVERSION OF THE GRAVITY ENERGY INTO THE MECHANICAL ENERGY

(51) International classification	:F03G0003000000, F03G0007080000, H02K0033160000, C07C0001040000, F03G0007100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SUDHIR AMRATBHAI KATHIRIYA
Address of Applicant :C-60, RADHA KRUSHNA ROW HOUSE, KHOLVAD, SURAT - 394190, GUJARAT, INDIA ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SUDHIR AMRATBHAI KATHIRIYA
Address of Applicant :C-60, RADHA KRUSHNA ROW HOUSE, KHOLVAD, SURAT - 394190, GUJARAT, INDIA ---------- ----------

(57) Abstract :
SYSTEM FOR THE CONVERSION OF THE GRAVITY ENERGY INTO THE MECHANICAL ENERGY A system (1) for the conversion of the grravity energy into the mechanical energy comprises a support (2). The at least one driving device (30) mounted in relation to the support (2). The at least one first eccentric mass (13) having a predetermined moment of inertia, the at least one first eccentric mass (13) rotatable in rotation (Rl) in relation to the support (2) around a first axis (Al). The at least one second eccentric mass (23) having a predetermined moment of inertia, the at least one second eccentric mass (23) rotatable in rotation (R2) in relation to the support (2) around a second axis (A2), the at least one second eccentric mass (23) in rotatable engagement with the at least one first eccentric mass (13) for rotate therewith, the at least one driving device (30) continuously rotates the at least one first eccentric mass (13) and at least one second eccentric mass (23) at a predetermined angular velocity by continuously providing a predetermined torque to continuously generate a predetermined torque around the first axis (Al) and a second axis (A2).



No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/01/2022

(21) Application No.202221004294 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SELF ENERGIZED SANITIZING DOOR HANDLE

(51) International classification :E05B0001000000, E05B0007000000, A61L0002000000, A47L0023020000, F21V0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Rutvik Dnyaneshwar Mehenge
Address of Applicant :Sadguru Krupa, Emerald Colony Road, Akoli Khurd, Akola,Maharashtra-444002, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rutvik Dnyaneshwar Mehenge
Address of Applicant :SADGURU KRUPA, EMERALD COLONY ROAD, AKOLI KHURD AKOLA, MAHARASHTRA-444002, INDIA ---------- ----------

(57) Abstract :
The present invention discloses a self-energized sanitizing door handle. The door handle consists of an actuator pivotably attached to the housing. The housing is attached to a door and contains a windup mechanism with gear trains and a generator. The movement of the actuator rotates the actuator gear train which in turn actuates the windup mechanism; the windup mechanism movement is translated into a generator gear train which in turn activates the generator. The generator produces the electrical energy that powers a UV light source. The UV light produced by the light source is directed to an outer surface of the actuator integrated with the titanium dioxide photo-catalyst material layer, thereby deactivating pathogens on the outer surface.

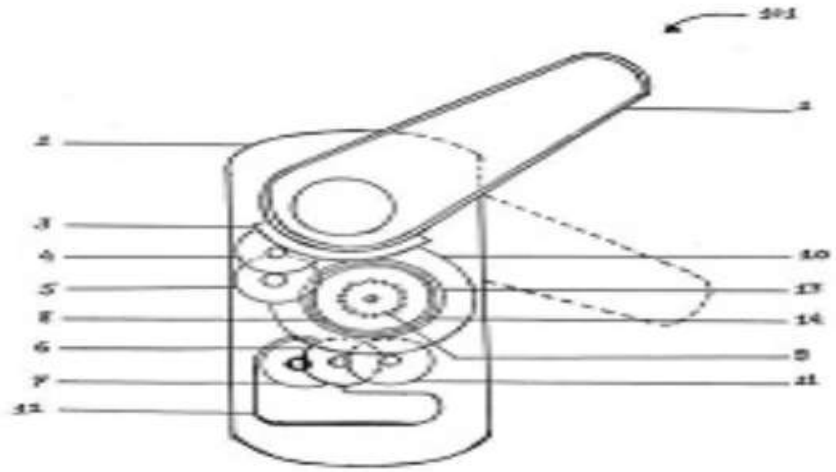


Figure 1

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2022

(21) Application No.202221004613 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR ACCEPTING PARCEL DELIVERY

(51) International classification :G06Q0010080000, A47G0029200000, E06B0007320000, A47G0029140000, E05G0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Shri Ramdeobaba College of Engineering and Management
Address of Applicant :Shri Ramdeobaba College of Engineering and Management Katol Road, Gittikhadan, Nagpur-440013, Maharashtra, India ---------- ----------
2)RATHOD, Vasundhara
3)KHURANA, Khushboo
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)RATHOD, Vasundhara
Address of Applicant :Shri Ramdeobaba College of Engineering and Management, Katol Road, Gittikhadan, Nagpur - 440013 ---------- ----------
2)KHURANA, Khushboo
Address of Applicant :Shri Ramdeobaba College of Engineering and Management, Katol Road, Gittikhadan, Nagpur - 440013 ---------- ----------

(57) Abstract :
ABSTRACT A SYSTEM FOR ACCEPTING PARCEL DELIVERY The present invention relates a system for accepting parcel delivery. The object of the proposed invention to delivers any type of parcel inside the house/delivery premises. The present invention relates to a parcel acceptor system, particularly to be installed through the wall, partly inside the house and partly outside the house. The parcel delivery acceptor is provided with a closed delivery acceptor box with an electronically lockable opening/door provided in the front side to receive the parcel and an opening in the in-house unit to deliver the parcel inside the house. The opening in the in-house unit may be a lockable opening or flap(s) or flap opening or entirely open. Following invention is described in detail with the help of Figure 1 and 2 of sheet 1 illustrate proposed invention. [To be published with figure 1]

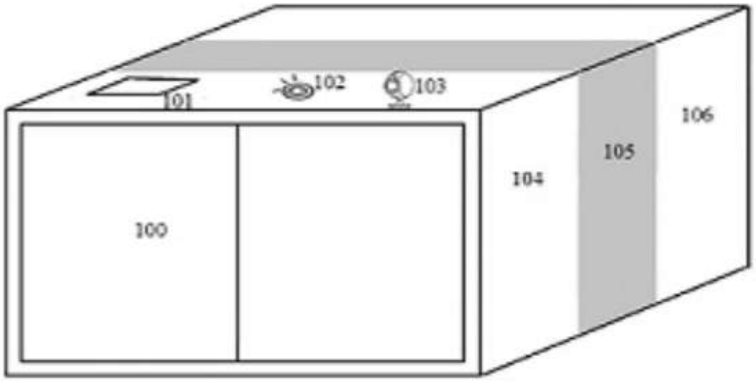


Figure 1

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/01/2022

(21) Application No.202221005056 A

(43) Publication Date : 15/04/2022

(54) Title of the invention : A MACHINE LEARNING BASED MODEL FOR FORECASTING WEATHER OF PARTICULAR GEOGRAPHICAL LOCATION

(51) International classification :G01W0001100000, G06Q0010040000, G06N0020000000, G05B0013040000, G06N0003080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. RAIS ABDUL HAMID KHAN
Address of Applicant :PROFESSOR, DEPARTMENT OF CSE, G H RAISONI UNIVERSITY, AMRAVATI - 444701 ---------- ----------
2)HEMANAND CHITTAPRAGADA
3)DR. K. MANOHARAN
4)DR JITENDRA KUMAR
5)ANAND DIGAMBARRAO KADAM
6)DR. DYUTI BANERJEE
7)DR. S. SARAVANAN
8)DR. S. VELAYUTHAM
9)DR. SATYENDRA NATH
10)MANISH SHARMA
11)DR.S.SRINIVASAN
12)DIGAMBAR BALASAHEB PATIL
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. RAIS ABDUL HAMID KHAN
Address of Applicant :PROFESSOR, DEPARTMENT OF CSE, G H RAISONI UNIVERSITY, AMRAVATI - 444701 ---------- ----------
2)HEMANAND CHITTAPRAGADA
Address of Applicant :ASSISTANT PROFESSOR/ CSE, SRI VASAVI ENGINEERING COLLEGE, PEDATADEPALLI - 534101 ---------- ----------
3)DR. K. MANOHARAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF BME, SNS COLLEGE OF TECHNOLOGY, SARAVANAMPATTI, COIMBATORE, TAMILNADU-641035 ---------- ----------
4)DR JITENDRA KUMAR
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS, SWAMI VIVEKANAND SUBHARTI UNIVERSITY, MEERUT ---------- ----------
5)ANAND DIGAMBARRAO KADAM
Address of Applicant :RESEARCH SCHOLAR, DR. G Y PATHRIKAR COLLEGE OF COMPUTER SCIENCE AND IT, AURANGABAD, 431003 ---------- ----------
6)DR. DYUTI BANERJEE
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF CSE, NIMS UNIVERSITY, JAIPUR ---------- ----------
7)DR. S. SARAVANAN
Address of Applicant :ASSISTANT PROFESSOR & RESEARCH GUIDE, PG & RESEARCH DEPARTMENT OF COMMERCE, DR. AMBEDKAR GOVERNMENT ARTS COLLEGE, VYASARPADI, CHENNAI- 600039 ---------- ----------
8)DR. S. VELAYUTHAM
Address of Applicant :ASSISTANT PROFESSOR/BUSINESS ADMINISTRATION, MOHAMMAD SATHAK COLLEGE OF ARTS AND SCIENCE, SHOLINGANALLUR, CHENNAI-600119 ---------- ----------
9)DR. SATYENDRA NATH
Address of Applicant :ASSISTANT PROFESSOR (SEL. GRADE), DEPARTMENT OF ENVIRONMENTAL SCIENCES AND NRM, COLLEGE OF FORESTRY, SHUATS, PRAYAGRAJ ---------- ----------
10)MANISH SHARMA
Address of Applicant :RESEARCH SCHOLAR, DEPARTMENT OF CIVIL ENGINEERING, JAMIA MILLIA ISLAMIA NEW DELHI ---------- ----------
11)DR.S.SRINIVASAN
Address of Applicant :ASSOCIATE PROFESSOR, SCHOOL OF CS & IT, DEPARTMENT OF IT, JAIN(DEEMED-TO-BE UNIVERISITY), 44/4, DISTRICT FUND ROAD, JAYANAGAR CAMPUS, 9TH BLOCK, JAYANAGARA, BENGALURU,KARNATAKA 560069 ---------- ----------
12)DIGAMBAR BALASAHEB PATIL
Address of Applicant :PH. D. RESEARCH SCHOLAR, CIVIL ENGINEERING DEPARTMENT, WALCHAND COLLEGE OF ENGINEERING SANGLI, MAHARASHTRA 416416. ---------- ----------

(57) Abstract :
A machine learning based model for forecasting weather of particular geographical location is the proposed invention that aims to achieve accuracy and efficacy in weather forecasting and prediction. The invention focuses on designing a hybrid model by integrating the two-machine learning based algorithms. The proposed invention addresses the drawbacks that are inherent in the existing system and thereby providing a more accurate predictive and forecasting model for forecasting the weather of particular geographical report.

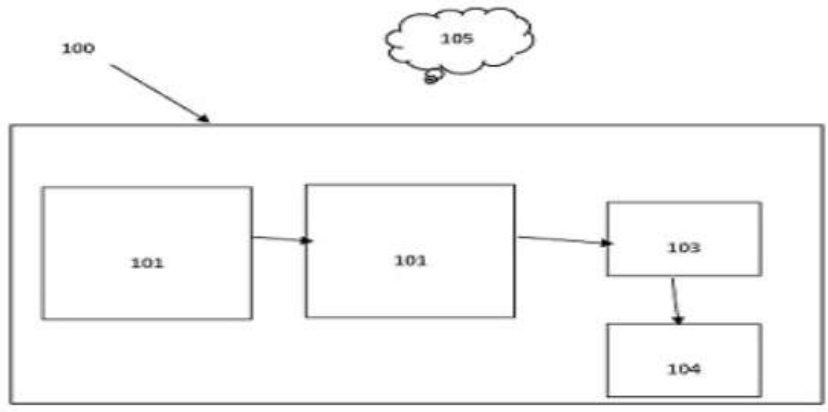


Figure 1: Block Diagram

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/02/2022

(21) Application No.202221005812 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADVANCED WEB BROWSING ANALYTICS THROUGH NATURAL LANGUAGE PROCESSING

(51) International classification :G06K0009620000, G06N0020000000, G06F0016957000, G06N0007000000, G06N0020100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. DEEPAK ANNASAHEB VIDHATE
Address of Applicant :PROFESSOR & HEAD OF DEPARTMENT, INFORMATION TECHNOLOGY, DR. VITHALRAO VIKHE PATIL COLLEGE OF ENGINEERING, VILAD GHAT, AHMEDNAGAR, MAHARASHTRA 414111 ---------- ----------
2)R G SAKTHIVELAN
3)N V S K VIJAYALAKSHMI K
4)DR V BHOOPATHY
5)BHASKAR MARAPELLI
6)DR.MOHD ABDUL HAMEED
7)TARUN KANODIA
8)DR.R.RAJAGOPAL
9)ARIVANANTHAM THANGAVELU
10)VIJAY
11)SWATI GARG
12)DR. RITU
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. DEEPAK ANNASAHEB VIDHATE
Address of Applicant :PROFESSOR & HEAD OF DEPARTMENT, INFORMATION TECHNOLOGY, DR. VITHALRAO VIKHE PATIL COLLEGE OF ENGINEERING, VILAD GHAT, AHMEDNAGAR, MAHARASHTRA 414111 ---------- ----------
2)R G SAKTHIVELAN
Address of Applicant :PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI ---------- ----------
3)N V S K VIJAYALAKSHMI K
Address of Applicant :ASST PROFESSOR,DEPT OF IT,SIR C R REDDY COLLEGE OF ENGINEERING,ELURU,534007 ---------- ----------
4)DR V BHOOPATHY
Address of Applicant :PROFESSOR / CSE, MALLA REDDY COLLEGE OF ENGINEERING, HYDERABAD - 500 100 ---------- ----------
5)BHASKAR MARAPELLI
Address of Applicant :LECTURER, SOFTWARE ENGINEERING DEPARTMENT, COLLEGE OF COMPUTING AND INFORMATICS, WOLKITE UNIVERSITY ---------- ----------
6)DR.MOHD ABDUL HAMEED
Address of Applicant :DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY COLLEGE OF ENGINEERING, OSMANIA UNIVERSITY, HYDERABAD,,TELANGANA ---------- ----------
7)TARUN KANODIA
Address of Applicant :PROGRAMMER, I. K. GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA, PUNJAB, PINCODE: 144603 ---------- ----------
8)DR.R.RAJAGOPAL
Address of Applicant :ASSOCIATE PROFESSOR/COMPUTER SCIENCE AND ENGINEERING, NARSIMHA REDDY ENGINEERING COLLEGE, SECUNDERABAD- 500100 ---------- ----------
9)ARIVANANTHAM THANGAVELU
Address of Applicant :ASSISTANT PROFESSOR / INFORMATION TECHNOLOGY, DR. D. Y. PATIL INSTITUTE OF TECHNOLOGY, PIMPRI, PUNE, 411018 ---------- ----------
10)VIJAY
Address of Applicant :VIJAY, RESEARCH SCHOLAR, DEPT. OF CIVIL ENGINEERING, FACULTY OF ENGINEERING AND TECHNOLOGY, MRIIRS, FARIDABAD, HARYANA, INDIA ---------- ----------
11)SWATI GARG
Address of Applicant :ASSISTANT PROFESSOR (EDUCATION), INSTITUTE OF PROFESSIONAL EXCELLENCE AND MANAGEMENT GHAZIABAD 201010 ---------- ----------
12)DR. RITU
Address of Applicant :DR. RITU, ASSOCIATE PROFESSOR, DEPT. OF CHEMISTRY, CHHOTU RAM ARYA COLLEGE, SONEPAT-131001, HARYANA, INDIA ---------- ----------

(57) Abstract :
Advanced web browsing analytics through natural language processing is the proposed inventions that focus on better performance of web browsing. The invention aims at implementing the model that can use the machine learning algorithms such as K-means clustering to cluster the previous browsing data. Based on this prediction data will be obtained, which will direct the web browser accordingly.

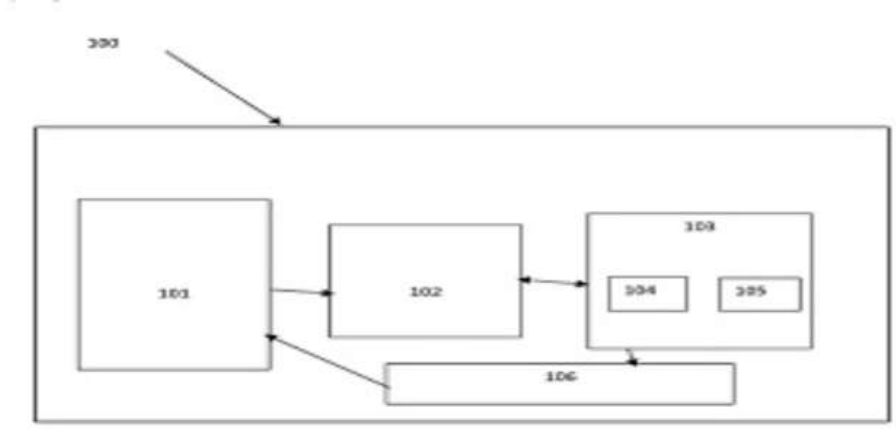


FIGURE 1: BLOCK DIAGRAM

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/02/2022

(21) Application No.202221006212 A

(43) Publication Date : 15/04/2022

(54) Title of the invention : A MACHINE LEARNING BASED APPROACH TO TRAIN THE EMPLOYEES FOR VOICE CALL PROCESS

(51) International classification :G06Q0010060000, G06F0016903200, G06N0020000000, G06Q0010100000, G11C0029020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. MUJAHID J. SIDDIQUI
Address of Applicant :DEPUTY DIRECTOR, DR. AMBEDKAR INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH, DEEKSHABHOOMI, NAGPUR- 440001 ---------- ----------
2)DR. NAWROZ RAMADAN KHALIL
3)SAI KRISHNA BOMMAVARAM
4)DR. BALACHANDRAN VADIVEL
5)MRS.JASPIN K
6)MRS. E. AJITHA
7)CRUZ THIVAGARAN A
8)MR. SANJAY LAXMANRAO GAIKWAD
9)DR. S. SARAVANAN
10)DR. S. VELAYUTHAM
11)DR SONU MISHRA
12)DR VIRENDRA GOMASE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. MUJAHID J. SIDDIQUI
Address of Applicant :DEPUTY DIRECTOR, DR. AMBEDKAR INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH, DEEKSHABHOOMI, NAGPUR- 440001 ---------- ----------
2)DR. NAWROZ RAMADAN KHALIL
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF ENGLISH CIHAN UNIVERSITY - DUHOK, KURDISTAN REGION, IRAQ ---------- ----------
3)SAI KRISHNA BOMMAVARAM
Address of Applicant :STUDENT, ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT, NIT WARANGAL, WARANGAL, 506004 ---------- ----------
4)DR. BALACHANDRAN VADIVEL
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF ENGLISH CIHAN UNIVERSITY - DUHOK, KURDISTAN REGION, IRAQ ---------- ----------
5)MRS.JASPIN K
Address of Applicant :ASSISTANT PROFESSOR/ COMPUTER SCIENCE AND ENGINEERING, ST.JOSEPH'S INSTITUTE OF TECHNOLOGY ,CHENNAI-119 ---------- ----------
6)MRS. E. AJITHA
Address of Applicant :ASSISTANT PROFESSOR/ COMPUTER SCIENCE AND ENGINEERING, ST.JOSEPH'S INSTITUTE OF TECHNOLOGY ,CHENNAI-119 ---------- ----------
7)CRUZ THIVAGARAN A
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF ENGLISH, JP COLLEGE OF ARTS AND SCIENCE, AGARAKATTU, TENKASI DISTRICT- 627852 ---------- ----------
8)MR. SANJAY LAXMANRAO GAIKWAD
Address of Applicant :ASSISTANT PROFESSOR (HEAD), DEPARTMENT OF PHYSICS, MAHATMA PHULE ARTS SCIENCE AND COMMERCE COLLEGE PANVEL DIST RAIGAD MAHARASHTRA 410206 ---------- ----------
9)DR. S. SARAVANAN
Address of Applicant :ASSISTANT PROFESSOR & RESEARCH GUIDE, PG AND RESEARCH DEPARTMENT OF COMMERCE, DR. AMBEDKAR GOVERNMENT ARTS COLLEGE, VYASARPADI, CHENNAI- 600039 ---------- ----------
10)DR. S. VELAYUTHAM
Address of Applicant :ASSISTANT PROFESSOR OF BUSINESS ADMINISTRATION, MOHAMMAD SATHAK COLLEGE OF ARTS AND SCIENCE, SHOLINGANALLUR, CHENNAI- 600119, ---------- ----------
11)DR SONU MISHRA
Address of Applicant :DEPARTMENT OF BIOINFORMATICS, OPJS UNIVERSITY, CHURU, RAJASTHAN, PIN-331303 ---------- ----------
12)DR VIRENDRA GOMASE
Address of Applicant :DEPARTMENT OF BIOINFORMATICS, OPJS UNIVERSITY, CHURU, RAJASTHAN, PIN-331303 ---------- ----------

(57) Abstract :
A machine learning based approach to train the employees for voice call process is the proposed invention which focuses on training the employees efficiently. The proposed invention aims at designing and implementing a prompting system that prompts answers to the employees based in costumer's queries. The invention will revolutionize the training process by cutting down on time required for training of employees.

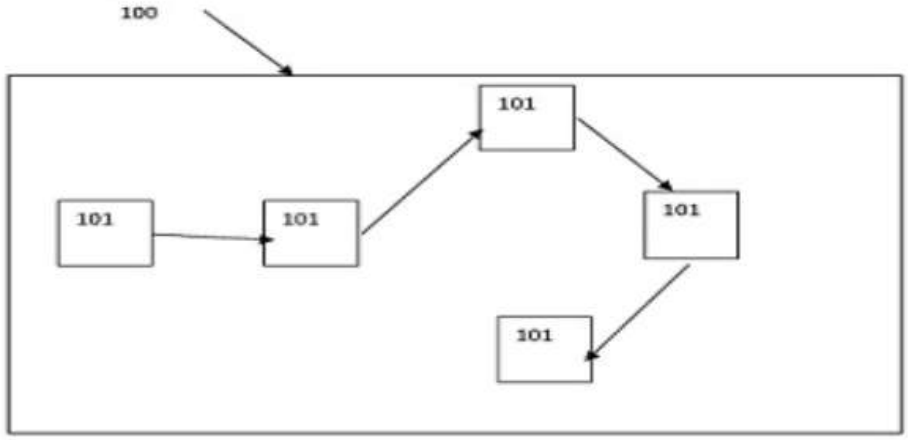


Figure 1: Block Diagram

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/02/2022

(21) Application No.202221006284 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ARTIFICIAL INTELLIGENCE BASED HYBRID MODEL FOR STRESS MANAGEMENT

(51) International classification :G06Q0010100000, G06N0003080000, G06F0016903200, G06N0020000000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)PROF. SPHURTI SUDHIR BIRAJDAR
Address of Applicant :ASSISTANT PROFESSOR , GLOBAL BUSINESS SCHOOL AND RESEARCH CENTRE, DR. D.Y.PATIL VIDYAPEETH , PUNE-411033 ---------- ----------
2)DR. T. RAVI
3)DR.SARITHA MIDIDODDI
4)DR. BALACHANDRAN VADIVEL
5)DR. DINESH GABHANE
6)SOUNDRA RAJAN D
7)SHANID MALAYIL
8)DR. NIRAJ GUPTA
9)DR. BHARATH V G
10)MR. RATNAKAR R. LANDE
11)DR SONU MISHRA
12)DR VIRENDRA GOMASE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)PROF. SPHURTI SUDHIR BIRAJDAR
Address of Applicant :ASSISTANT PROFESSOR , GLOBAL BUSINESS SCHOOL AND RESEARCH CENTRE, DR. D.Y.PATIL VIDYAPEETH , PUNE-411033 ---------- ----------
2)DR. T. RAVI
Address of Applicant :PROFESSOR /CSE, SHADAN WOMEN'S COLLEGE OF ENGINEERING AND TECHNOLOGY, KHAIRATABAD, HYDERABAD -500004 ---------- ----------
3)DR.SARITHA MIDIDODDI
Address of Applicant :ASST.PROFESSOR, MBA DEPARTMENT, VAAGDEVI ENGINEERING COLLEGE, WARANGAL, TELANGANA.-506002 ---------- ----------
4)DR. BALACHANDRAN VADIVEL
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF ENGLISH CIHAN UNIVERSITY - DUHOK, KURDISTAN REGION, IRAQ ---------- ----------
5)DR. DINESH GABHANE
Address of Applicant :ASSISTANT PROFESSOR, RAJEEV GANDHI COLLEGE OF MANAGEMENT STUDIES, GHANSOLI, NAVI MUMBAI-400701 ---------- ----------
6)SOUNDRA RAJAN D
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF VISUAL COMMUNICATION, NEHRU ARTS AND SCIENCE COLLEGE, COIMBATORE - 641105 ---------- ----------
7)SHANID MALAYIL
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, MEA ENGINEERING COLLEGE,MALAPPURAM - 679325 , KERALA, INDIA ---------- ----------
8)DR. NIRAJ GUPTA
Address of Applicant :ASSOCIATE PROFESSOR, COLLEGE OF PHARMACY AGRA, DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW, UTTAR PRADESH ---------- ----------
9)DR. BHARATH V G
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, BRINDAVAN COLLEGE OF ENGINEERING, BENGALURU, 560063 ---------- ----------
10)MR. RATNAKAR R. LANDE
Address of Applicant :ASSISTANT PROFESSOR, G H RAISONI INSTITUTE OF ENGINEERING & TECHNOLOGY, SHRADHA PARK, B-37-39/1, MIDC, HINGNA WADI LINK ROAD, NAGPUR-440016 ---------- ----------
11)DR SONU MISHRA
Address of Applicant :DEPARTMENT OF BIOINFORMATICS, OPJS UNIVERSITY, CHURU, RAJASTHAN, PIN-331303 ---------- ----------
12)DR VIRENDRA GOMASE
Address of Applicant :DEPARTMENT OF BIOINFORMATICS, OPJS UNIVERSITY, CHURU, RAJASTHAN, PIN-331303 ---------- ----------

(57) Abstract :
An artificial intelligence-based hybrid model for stress management is the proposed invention which focuses on giving suggestion and comments for handling stress. The proposed invention aims at implementing a frame work that uses artificial intelligence techniques to train a model that will be trained using previous work history of employees. the invention plays a vital role in maintaining physical health of employees and thus the overall welfare of organisation.

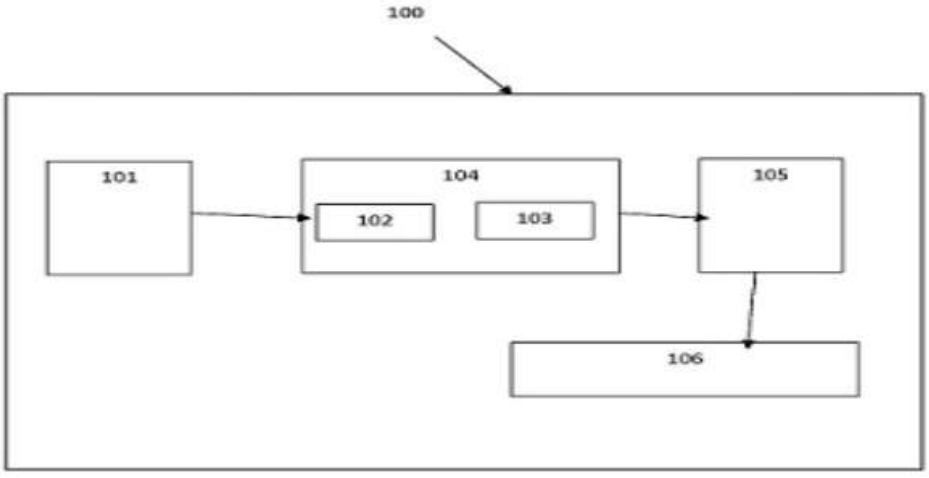


FIGURE 1: BLOCK DIAGRAM

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/02/2022

(21) Application No.202221006822 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR AIDING DURING MEDICAL EMERGENCY

(51) International classification	:G16H0040200000, H04L0029080000, H04N0021218700, H04W0004020000, G06Q0020400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KUMAR, Somesh
Address of Applicant :ABV-Indian Institute of Information Technology and Management Gwalior (IIITM), Morena Link Road, Gwalior, Madhya Pradesh - 474015, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KUMAR, Somesh
Address of Applicant :ABV-Indian Institute of Information Technology and Management Gwalior (IIITM), Morena Link Road, Gwalior, Madhya Pradesh - 474015, India. ---------- ----------
2)DHYANI, Rishabh
Address of Applicant :ABV-Indian Institute of Information Technology and Management Gwalior (IIITM), Morena Link Road, Gwalior, Madhya Pradesh - 474015, India. ---------- ----------
3)SINGH, Udit
Address of Applicant :ABV-Indian Institute of Information Technology and Management Gwalior (IIITM), Morena Link Road, Gwalior, Madhya Pradesh - 474015, India. ---------- ----------
4)TEWARI, Saksham
Address of Applicant :ABV-Indian Institute of Information Technology and Management Gwalior (IIITM), Morena Link Road, Gwalior, Madhya Pradesh - 474015, India. ---------- ----------
5)SHARMA, Gaurav
Address of Applicant :De Havilland Campus, Mosquito Way, Hatfield AL10 9EU, United Kingdom. ---------- ----------
6)BHADORIA, Robin Singh
Address of Applicant :GLA University, 17km Stone, NH-2, Mathura-Delhi Road Mathura, Chaumuhan, Uttar Pradesh - 281406, India. ---------- ----------
7)MINAKSHI
Address of Applicant :MITS Gwalior, Racecourse Road, Near Gola Ka Mandir, Mela Ground, Thatipur, Gwalior, Madhya Pradesh - 474005, India. ---------- ----------

(57) Abstract :
The present disclosure provides a system (102) for aiding during medical emergency, the system comprising a processor (202) is coupled to a memory, the memory storing instructions executable by the processor to receive, from a first computing device (106) associated with a plurality of users, a request for one or more vehicles, access the request by a second computing device (110) associated with one or more service providers of the one or more vehicles. The processor can allocate the vehicles to the requested users based on the set of parameters to resolve conflicts and human intervention, wherein based on the determination of the set of parameters, the processor configured to assist the one or more service providers of the allocated vehicles to transport the requested users to the health center with the available facility in a short time.

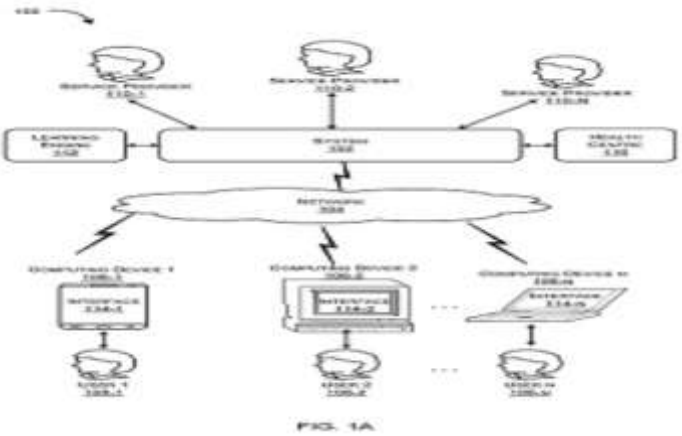


FIG. 1A

No. of Pages : 56 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/02/2022

(21) Application No.202221007543 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART IOT BASED RECHARGING POINTS FOR ELECTRIC VEHICLES

(51) International classification :H02J0007000000, B60L0053300000, B60L0053650000, B60L0053600000, B60L0053660000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. RAIS ABDUL HAMID KHAN
Address of Applicant :ASSOCIATE PROFESSOR, CSE DEPARTMENT,G H RAISONI UNIVERSITY, AMRAVATI, MAHARASHTRA, 444701,INDIA. ---------- ----------
2)DEEPAK GOWDA .L
3)SAYYED ARIF ALI
4)DR BHARAT SINGH DEORA
5)ELANGO S
6)DR YUVARAJ DURAISAMY
7)DR. PRASHANT KUMAR SHUKLA
8)ER. YOGENDRA KUMAR
9)CHANDRESH MYSURU PARAMESHWARAIAH
10)DR.VINAYAKA K.S
11)ARULKUMAR P
12)MADAN MOHAN M
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. RAIS ABDUL HAMID KHAN
Address of Applicant :ASSOCIATE PROFESSOR, CSE DEPARTMENT,G H RAISONI UNIVERSITY, AMRAVATI, MAHARASHTRA, 444701,INDIA. ---------- ----------
2)DEEPAK GOWDA .L
Address of Applicant :PROJECT ENGINEER, PANASONIC INDIA PVT LTD, GLOBAL TECH PARK, LANGFORD ROAD, MG ROAD, BANGLORE -560025 ---------- ----------
3)SAYYED ARIF ALI
Address of Applicant :ASSISTANT PROFESSOR, ELECTRONICS AND COMMUNICATION ENGG. DEPT., MEWAR UNIVERSITY, GANGRAR, CHITTORGARH, 312901 ---------- ----------
4)DR BHARAT SINGH DEORA
Address of Applicant :SR. ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE & IT, UDAIPUR, 313001 ---------- ----------
5)ELANGO S
Address of Applicant :DIRECTOR, SHF DESIGN ENGINEERING PRIVATE LIMITED,CHENNAI 600004 ---------- ----------
6)DR YUVARAJ DURAISAMY
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF COMPUTER SCIENCE CIHAN UNIVERSITY - DUHOK KURDISTAN REGION, IRAQ ---------- ----------
7)DR. PRASHANT KUMAR SHUKLA
Address of Applicant :ASSOCIATE PROFESSOR (RESEARCH), DEPARTMENT OF CSE, KONERU LAKSHMAIAH EDUCATION FOUNDATION, VADDESWARAM, GUNTUR, ANDHRA PRADESH 522502 ---------- ----------
8)ER. YOGENDRA KUMAR
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS, VSP GOVERNMENT PG COLLEGE KAIRANA, SHAMLI, UP, INDIA. PINCODE 247774 ---------- ----------
9)CHANDRESH MYSURU PARAMESHWARAIAH
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF POLYMER SCIENCE AND TECHNOLOGY, SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING, JSS SCIENCE AND TECHNOLOGY UNIVERSITY, MYSURU 570006 ---------- ----------
10)DR.VINAYAKA K.S
Address of Applicant :ASSISTANT PROFESSOR, DEPT OF BOTANY, SRI VENKATARAMANA SWAMY COLLEGE, BANTWAL-574211, DAKSHINA KANNADA, KARNATAKA ---------- ----------
11)ARULKUMAR P
Address of Applicant :ASSOCIATE PROFESSOR/EEE, V.S.B. ENGINEERING COLLEGE, KARUR, TAMILNADU-639111 ---------- ----------
12)MADAN MOHAN M
Address of Applicant :ASSISTANT PROFESSOR, COMPUTER SCIENCE AND ENGINEERING, NEHRU INSTITUTE OF ENGINEERING AND TECHNOLOGY,COIMBATORE,641105 ---------- ----------

(57) Abstract :
Smart IOT based recharging points for electric vehicles is the proposed invention which aims to address the recharging scarity inherent in the existing systems. The proposed system tries to facilitate recharging stations or the electric vehicles by prompting the kilometers left and the need fir battery recharge. The invention will address the needs of electric vehicle and the flaws of battery rechargeable concept.

No. of Pages : 11 No. of Claims : 4

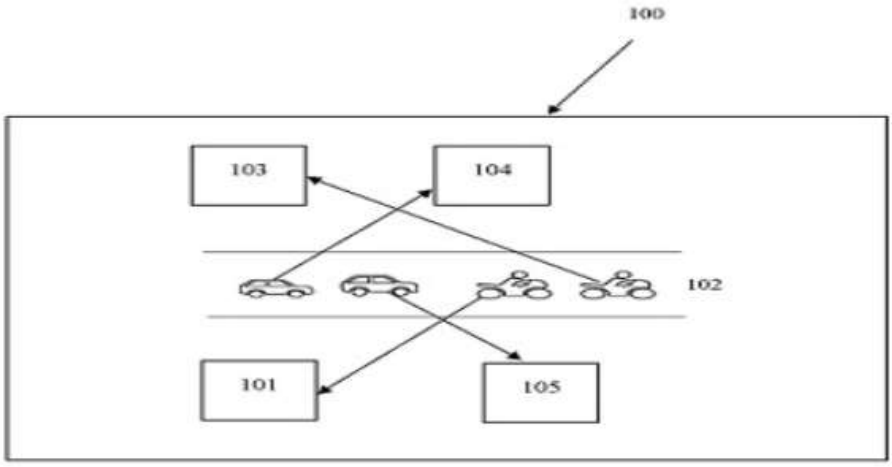


Fig 1: Schematic view

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/02/2022

(21) Application No.202221007599 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NOVEL N-4-(SUBSTITUTED ARYL)-N-2-(4-CHLOROPYRIMIDIN-2-YL)-6,7-DIMETHOXYQUINAZOLINE-2, 4-DIAMINES AS ANTICANCER AGENTS

(51) International classification :A61P0035000000, A61K0031437000, A61K0031506000, A61P0011060000, A61P0037080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SANTOSH NAMDEO MOKALE
Address of Applicant :Plot No129, Pethe Nagar, Bhavsingpura, Aurangabad ---------- ----------
2)SHWETA ASHOK MORE
3)NIKHILKUMAR SUDHIR SAKLE
4)ARCHANA DHAVALE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SANTOSH NAMDEO MOKALE
Address of Applicant :Plot No129, Pethe Nagar, Bhavsingpura, Aurangabad ---------- ----------
2)SHWETA ASHOK MORE
Address of Applicant :703/A wing, Anandi Complex, Shani Mandir Road, Near Jai Bai School, Katemanvali, Kalyan East ---------- ----------
3)NIKHILKUMAR SUDHIR SAKLE
Address of Applicant :Flat 01, Shree Residency, Vivekanandpuram, Peer bazaar, Osmanpura, Aurangabad ---------- ----------
4)ARCHANA DHAVALE
Address of Applicant :Department of Biochemistry, Government Medical College and Cancer Hospital, Aurangabad ---------- ----------

(57) Abstract :
ABSTRACT The invention relates to synthesis and biological screening of novel N-4-(substituted aryl)-N-2-(4-chloropyrimidin-2-yl)-6,7-dimethoxyquinazoline-2, 4-diamines analogues of the general Formula A, their salts, hydrates, and pharmaceutical compositions. The invention also relates to the methods of preparation of the novel N-4-(substituted aryl)-N-2-(4-chloropyrimidin-2-yl)-6,7-dimethoxyquinazoline-2, 4-diamines analogues. Formula A

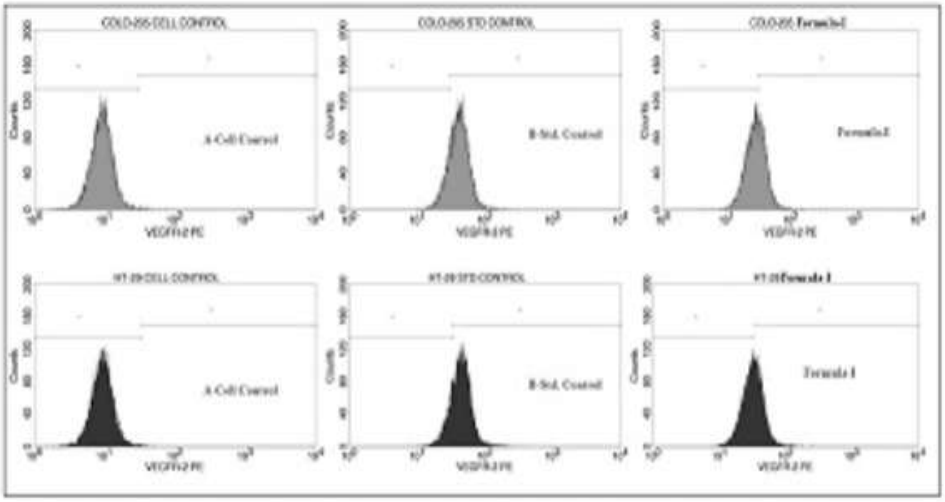


Fig. 1: VEGFR-2 inhibition study of Untreated (A), Std. control (B) and Formula I (C) against the COLO-205 and HT-29 cells using BD FACS Caliber, Cell Quest Pro Software (Version: 6.0).

No. of Pages : 29 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/02/2022

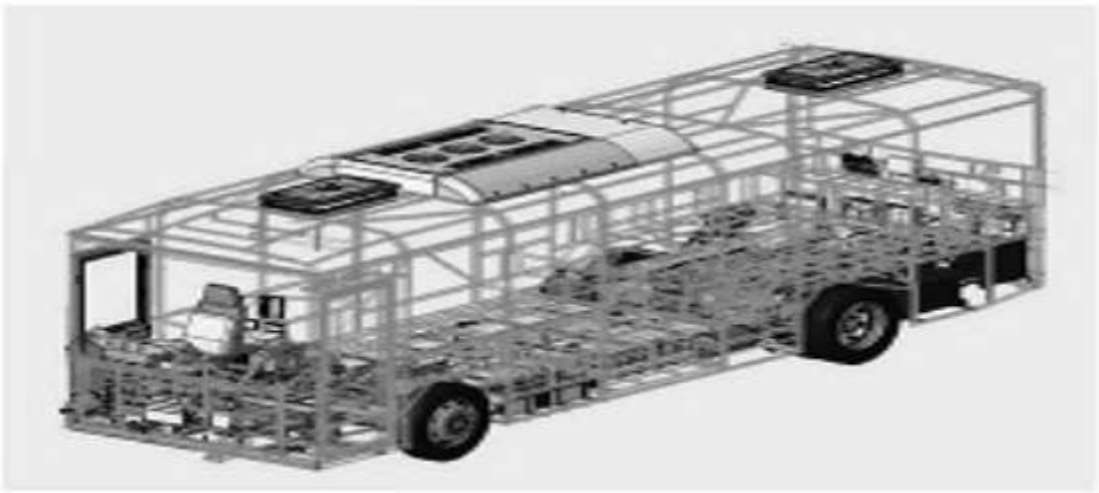
(21) Application No.202221008371 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IMPROVED MONOCOQUE ELECTRIC BUS STRUCTURE

(51) International classification :G06F0030230000, B62D0031020000, B62D0047020000, C22C0038040000, B62D0031000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Pinnacle Mobility Solutions
Address of Applicant :302, Sector 7 Road, MIDC Sector 2 Industrial Area, MIDC Bhosari, Pimpri Chinchwad, Pune 411026, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)YASEEN KHAN
Address of Applicant :A-74,ST NO-5,Rajeev Nagar Near Bhalswa Dairy, Delhi-110042 ---------- ----------

(57) Abstract :
TITLE OF THE INVENTION: Improved Monocoque Electric Bus Structure'' ABSTRACT: The present disclosure relates to Monocoque Electric Bus Structure mainly focusing on the mass saving potential of ultra-high strength stainless steel (SS409M) as applied to the structure of a full-size urban city bus. The resulting design for a low floor, electric bus has an empty weight 30% less than that of a conventional city bus. The reduced curb weight allows for a greater payload, without exceeding legal axle limits wherein a combination of finite element modeling and dynamic testing of models was used to predict structural performance. Representative fig. 1



No. of Pages : 22 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/02/2022

(21) Application No.202221008490 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INCREASE IN EFFICIENCY OF WEC BY INTEGRATING IT WITH A&M MODULE

(51) International classification	:F03B0013180000, G06F0009500000, H01L0027115020, H02K0007106000, F03B0013220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mohin Harshadbhai Patel
Address of Applicant :185, Luhar Faliyu, Amroli ---------- ----------
2)Parekh Abhishek Jayesh
3)Patel Mann Baijukumar
4)Radadiya Vijaykumar Arvindbhai
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mohin Harshadbhai Patel
Address of Applicant :185, Luhar Faliyu, Amroli ---------- ----------
2)Parekh Abhishek Jayesh
Address of Applicant :203, Jhanvi Complex, Opposite Ramji Mandir, Satimata ni seri, Rugnathpura, Surat, Gujarat – 395006, India ---------- ----------
3)Patel Mann Baijukumar
Address of Applicant :24, Pashupatinath Society, Near S.M.C School, Nana varachha, Surat, Gujarat – 395006, India ---------- ----------
4)Radadiya Vijaykumar Arvindbhai
Address of Applicant :401, A-1, Trikam Nagar, Opp. SMC East Zone Office, L. H. Road, Surat, Gujarat – 395006, India ---------- ----------

(57) Abstract :
Increase in Efficiency of WEC by integrating it with slit Module. There are wide range of prime movers invented in area of green energy. One of such is WEC by oceanlinx and other prime movers which converts wave energy of ocean in to electricity. But main problem is that its efficiency is very low. It depends on height of waves. the more height, the more efficiency. But it cannot be installed far from ocean because large waves from all side can damage it. Moreover, transmission of electricity also becomes complex due to more distance. So, by use of this A&M module, we can increase the height waves near sea shore in fix small area and thus can increase the efficiency of prime movers like WEC. This increase of height is in limited small area near WEC so rest of the shore is kept normal. This invention belongs to renewable energy field in specific and it solves the main technical problem of low efficiency of WEC and other such prime movers. This can be used in generation of electricity on large scale and holds immense potential.

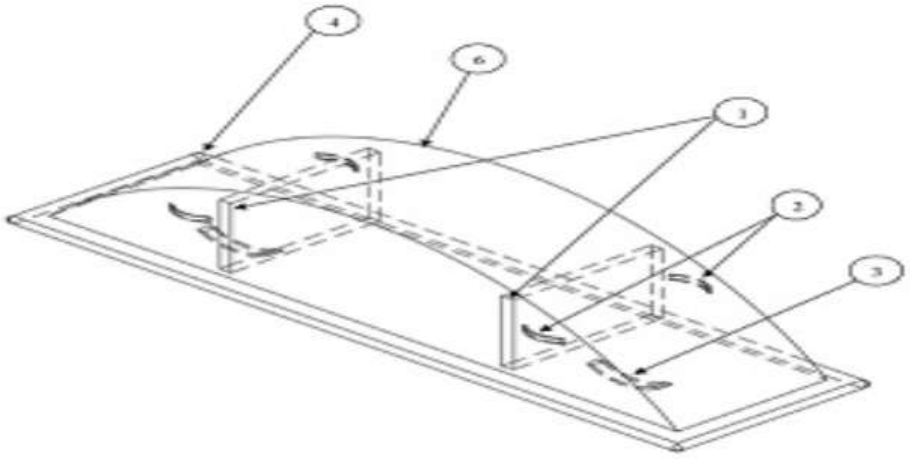


FIG. 1

No. of Pages : 23 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

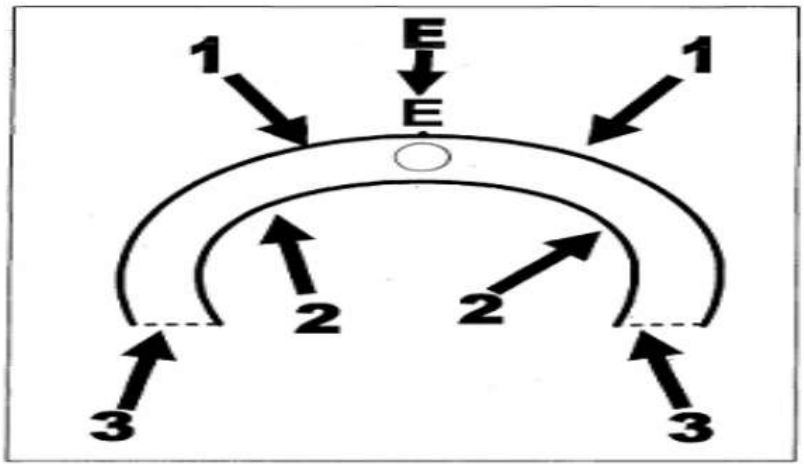
(21) Application No.202221008599 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VACUUM INSULATED HELMET (HEAD COVER).

(51) International classification :F02F0007000000, H01H0033666000, A63B0060620000, A42B0003040000, E06B0003660000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)TIWARI VIJAY KUMAR
Address of Applicant :E-6/109, 11 NO. STREET(SAI BOARD), BHOPAL, MADHYA PRADESH, INDIA - 462 016. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)TIWARI VIJAY KUMAR
Address of Applicant :E-6/109, 11 NO. STREET(SAI BOARD), BHOPAL, MADHYA PRADESH, INDIA - 462 016. ---------- ----------
2)MRS.NEETI PANDE
Address of Applicant :E-6/109, 11 NO. STREET(SAI BOARD), BHOPAL, MADHYA PRADESH, INDIA - 462 016. ---------- ----------

(57) Abstract :
Vacuum Insulated Helmet (Head Cover) The optimum procedure is to remove padding set arranged an between the extended exterior side of the polystyrene foam shell (1) and the extended interior shell (2) Thereafter joining the edges of both the shells (1 + 2) with sealing, the removed padded hallow space (0) air atoms be evacuated through the top (E) of the upper polystyrene foam shell by retractable system. Thus with this simple performance, an insulated helmet can be commissioned. In case Helmets having no padding set system, then at least one or two centimetre wide space as atomless (vacuum) be maintained in between shells so that impact force movement remain sustained or restricted at either of the shells. Helmet insulated technology is to insulate heat and cold, fire flames, electric current, safe landing on ground and water ways and above all to insulate impact movement of energy.



No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202221008960 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NANOMATERIAL-ANTIBODY CONJUGATION FOR INFECTION DIAGNOSIS USING CHEWING GUM

(51) International classification :A23G0004060000, C12Q0001040000, A23G0004100000, A23G0004200000, C12Q0001020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SHOBHA AJEET WAGHMODE
Address of Applicant :G-35, CHIDANAND CHS, 129/1, SUS ROAD, PASHAN, PUNE - 411021, MAHARASHTRA, INDIA. ---------- ----------
2)AYUSHI SUHAS KATDARE
3)AMEYA ANIRUDHA PAWAR
4)SHAUNAK SHREEPAD JOSHI
5)TRUPTI SAKHARAM ZAWARE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SHOBHA AJEET WAGHMODE
Address of Applicant :G-35, CHIDANAND CHS, 129/1, SUS ROAD, PASHAN, PUNE - 411021, MAHARASHTRA, INDIA. ---------- ----------
2)AYUSHI SUHAS KATDARE
Address of Applicant :D-4 SUKHWANI RESIDENCY GANESH NAGAR,DAPODI,PUNE,MAHARASHTRA,INDIA-411012. ---------- ----------
3)AMEYA ANIRUDHA PAWAR
Address of Applicant :MUKTAI,DHANORI ROAD,PUNE,MAHARASHTRA,INDIA-411015 ---------- ----------
4)SHAUNAK SHREEPAD JOSHI
Address of Applicant :NAVSAHYADRI SOCIETY,KARVE NAGAR,PUNE,MAHARASHTRA,INDIA-411052 ---------- ----------
5)TRUPTI SAKHARAM ZAWARE
Address of Applicant :WARJE GAON,MAULI KRUPA,PUNE,MAHARASHTRA,INDIA-411058 ---------- ----------

(57) Abstract :
Abstract Page TITLE OF THE INVENTION: Nanomaterial-antibody conjugation for infection diagnosis using chewing gum ABSTRACT OF THE INVENTION The product is a chewing gum to aid in detection and diagnosis of infections. In the presence of a biomarker of a pathogen in the patient's sample, the gum shows colour change. The detection complex is nanoparticle-based, in combination with antibodies, protein or other biomolecules. The detection complex may be linked to an indicator for production of colour. A set of these chewing gums would be used to detect various infections of different origins. It may also be used for early detection of co-infections, caused by simultaneous infections by different pathogens. In this work, gold, silver and titanium dioxide nanoparticles with carbon quantum dots for making core-shell nanomaterials. Different formulations were prepared using these nanoparticles by using sonochemical and hydrothermal method. Core-shell nanomaterials were prepared with silver as an inner core, carbon dots as middle layer and gold nanoparticles as a shell material by using above methods and these gave best results. These spectrophotometric results are listed in Table. The nanoparticles have been characterised primarily by using UV-Visible spectrophotometer and then by X-ray diffraction and TEM images. For formulation of diagnostic, binding ability characterization were done by using FTIR.

No. of Pages : 12 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202221009489 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SELF KINDLE INSECT REPEL IMPLEMENT

(51) International classification	:H01F0017000000, C02F0003120000, H01L0029080000, A61K0008230000, C02F0009000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mirza Mohammad Idrees Ul Haq Beigh
Address of Applicant :Venkateshwara House, S No 114/A/2 Sinhgad Raod, Near Rajaram Bridge ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mirza Mohammad Idrees Ul Haq Beigh
Address of Applicant :Venkateshwara House, S No 114/A/2 Sinhgad Raod, Near Rajaram Bridge ---------- ----------

(57) Abstract :
A SELF KINDLE INSECT REPEL IMPLEMENT The present disclosure is related to chemical field, and envisages A self-kindle insect repel Implement (100). The Implement (100) comprises a spiral structure (101) with a self-kindle material (102) present on its end, and in between the spiral. The spiral structure is centrally connected to the tine (201) which is grounded with a base (202).

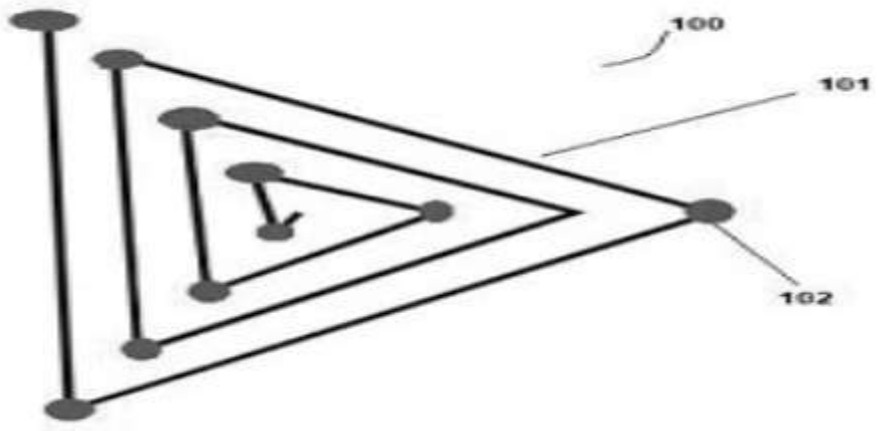


Figure 1

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/02/2022

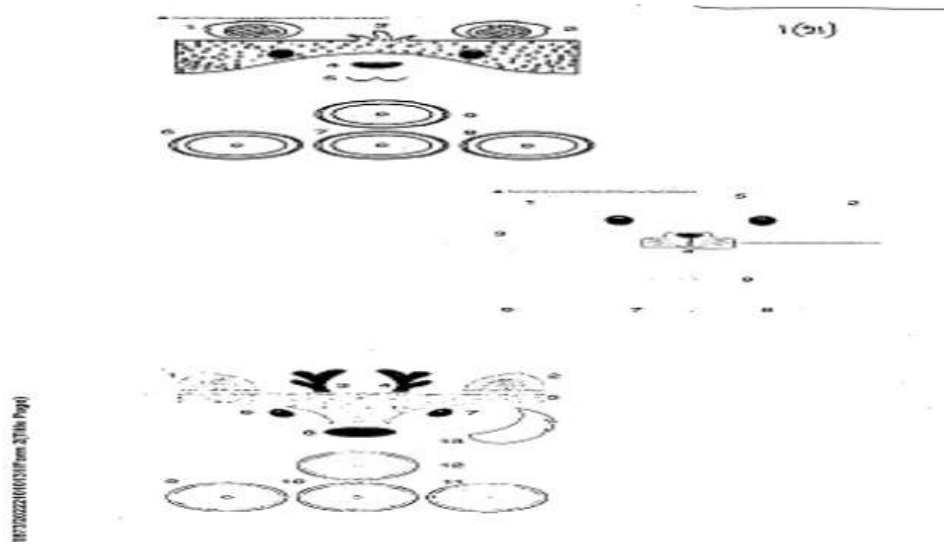
(21) Application No.202221010131 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AGR PATENTED INTERLOCKING WOODEN PANEL ASSEMBLY DECOR

(51) International classification	:E04F0015020000, H04W0084120000, A47B0096200000, C21D0009573000, G06Q0010100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ACEGROWTHRINGS LLP
Address of Applicant :FLAT NO. 3101, 31ST FLOOR, GARDEN COURT, DASTURWADI, MMGS MARG, DADAR, MUMBAI - 400014, MAHARASHTRA, INDIA. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SAISAGAR SHARAD JADHAV
Address of Applicant :FLAT NO. 3101, 31ST FLOOR, GARDEN COURT, DASTURWADI, MMGS MARG, DADAR, MUMBAI - 400014, MAHARASHTRA, INDIA. ---------- ----------
2)DARSHANA PUSHKARAJ VARTAK
Address of Applicant :ROOM NO-802,GODAVARI,WORLI SAGAR CHS SIR POCHKANWALA ROAD,WORLI,WORLI COLONY,MUMBAI CITY,MAHARASHTRA,INDIA-400030 ---------- ----------

(57) Abstract :
The limited liability partnership, Ace Growth Rings LLP is a registered LLP under the Limited liability Partnership Act, 2008. The Managing Directors (officially Designated Partners) are Mrs. Darshana Vartak and Mr. Saisagar Jadhav. Material For our trolleys, storage boxes (square and rectangle) and toolboxes, we use high density fiberboard (IIDF) that's 6 mm. For our chairs, we use HDF that's 12 mm. For our bookshelves and cabinets, we use Birch plywood of varying thicknesses. The paint material used for our chairs, trolleys, storage boxes (square and rectangle) and toolboxes 1. Primer: ESDEE PS White 2. Paint: ESDEE Cellocoat White 3. Thinner: Ashok Thinner 4. Final Thinner: DKLAC Thinner Ace Growth Rings makes fun and learn DIY activities for children. The products are designed with children's developing brain in mind, and the concept is based on inspiring children to be confident and self-reliant by allowing them to build models on their own, while picking up important creative and motor skills on the way. The build quality is premium. Models are made with sustainably produced and environmentally friendly medium-density fiberboard, except bookshelves, which are made from Russian birch. After being assembled, AGR products are fully functional items that the child can use. They function as elegant kids-themed decor items, just like the custom-made decor one might have seen in movies in children's bedrooms. Children assemble the wooden models themselves and stick stickers on them, making the products look like the animals. This activity helps them in becoming confident, and also augment their cognitive skills, fine motor skills and gross motor skills. The bookshelves package contains: Plywood pieces Assembly manual The other products packaged contains: MDF pieces Chalk slate piece Nuts and bolts (only trolleys and toolboxes) Pulling rope (only trolleys) Stickers Assembly manual



No. of Pages : 27 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/02/2022

(21) Application No.202221010726 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR IMAGE-BASED INGREDIENT RETRIEVAL AND RECOMMENDING CONSUMABLES TO USER BASED ON FRESHNESS INDEX

(51) International classification :G06Q0030060000, G06Q0030020000, B29K0055020000, G09B0005020000, B29K0025000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Sheetal Sonawane
Address of Applicant :C-201, 9 Green Park, Sahakarnagar, No 02, Pune-09, Maharashtra, India ---------- ----------
2)Mr. Ameya Abhay Chavan
3)Mr. Atharva Ajay Gokhale
4)Ms. Eesha Kulkarni
5)Ms. Tanshree Patil
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sheetal Sonawane
Address of Applicant :C-201, 9 Green Park, Sahakarnagar, No 02, Pune-09, Maharashtra, India ---------- ----------
2)Mr. Ameya Abhay Chavan
Address of Applicant :D-22, Chintamani Residency, near Lake Town, Pune - 37, Maharashtra, India ---------- ----------
3)Mr. Atharva Ajay Gokhale
Address of Applicant :C-101, Marigold Avenue, NDA Pashan Road, Bavdhan, Pune - 21 , Maharashtra, India ---------- ----------
4)Ms. Eesha Kulkarni
Address of Applicant :57 Swedganga Society, Warje, Pune- 411058, Maharashtra, India ---------- ----------
5)Ms. Tanushree Patil
Address of Applicant :Shree Hospital, Ganesh Nagar, Chalis Bigha, Malkapur, Buldhana, Maharashtra - 443101, India ---------- ----------

(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR IMAGE-BASED INGREDIENT RETRIEVAL AND RECOMMENDING CONSUMABLES TO USER BASED ON FRESHNESS INDEX A technical problem that the present invention intends to solve may be recited as how to determine freshness of the consumables and to alter/change/upgrade any ingredients thereof if required while purchasing the consumables. Therefore, the present invention provides a system and method of determining freshness value and/or recipe of consumables for recommending to a user and to alter/change/upgrade any ingredients thereof if required while purchasing the consumables. In order to attain the above object, a computerized method and a system for providing a recommendation to a user is provided. The system and method according to the present invention determines freshness value of consumables (102, 104, 106 and 108) and/or recipe of consumables so that the user can decide whether to purchase the consumable or not depending on the freshness value (110). The system and method also enables to alter/change/upgrade any ingredients of consumables while purchasing the consumables.

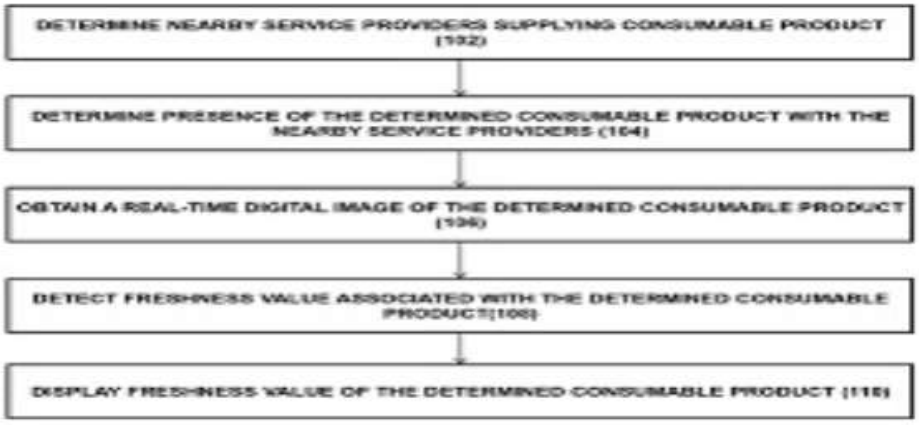


FIG. 1

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/02/2022

(21) Application No.202221010827 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PEDAL OPERATED LOW-COST MINOR MILLET THRESHER

(51) International classification :A01F0007040000, A01F0007000000, B63H0016080000, A01F0005000000, A01F0007020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Shalini Chaturvedi
Address of Applicant :Phd Scholar, Ph.D Scholar, CSIR (SRF), Dept. of Farm Machinery & Power Engineering , CAE, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur (M.P.), India ---------- ----------
2)Dr. Atul Kumar Shrivastava
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Shalini Chaturvedi
Address of Applicant :Phd Scholar, Ph.D Scholar, CSIR (SRF), Dept. of Farm Machinery & Power Engineering , CAE, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur (M.P.), India ---------- ----------
2)Dr. Atul Kumar Shrivastava
Address of Applicant :Professor & Head, Department of Farm Machinery and Power Engineering, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur (M.P.), India ---------- ----------

(57) Abstract :
The present invention relates to pedal operated low-cost minor millet thresher (100). The objective of the present invention is to solve the problems in the prior art technologies related to pedal operated threshing machine. The invention present a low cost pedal operated thresher is designed, fabricated especially for women operators. The pedal operated low-cost minor millet thresher (100) is comprised with several components viz. feeding chute (1), threshing unit (2), Drum pulleys (3), straw outlet (4), cleaning unit (5), blower (6), oscillating unit (7), seat (8), operating pedal (9), handle (10) and main frame (11).

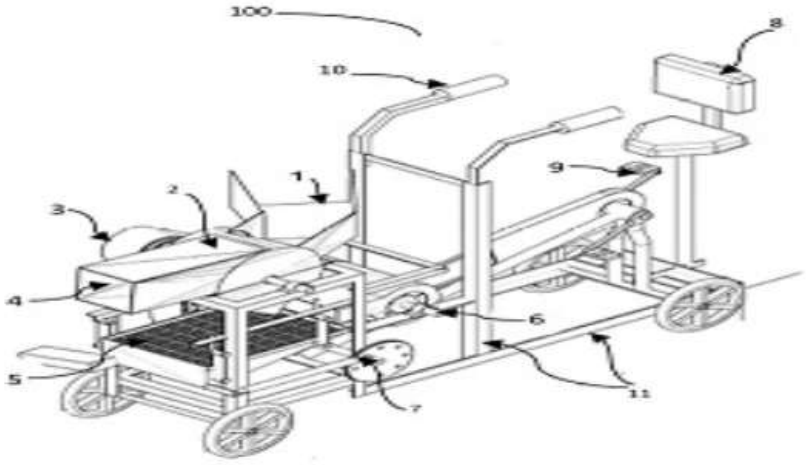


FIGURE 1

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/03/2022

(21) Application No.202221011195 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : REVERSIBLE CO2 /CO CONVERSION BY A HOMOGENEOUS COPPER-BASED MOLECULAR CATALYST

(51) International classification	:H01M0004020000, B01J0031180000, B01J0037030000, C11D0003390000, C07F0001080000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
Address of Applicant :Powai, Mumbai – 400076, Maharashtra, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DUTTA, Arnab
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
2)VISHAL, Vikram
Address of Applicant :Department of Earth Sciences, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
3)MAITI, Debabrata
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
4)LAHIRI, Goutam Kumar
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
5)GURIA, Somnath
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
6)DOLUI, Dependu
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
7)GHORAI, Santanu
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------
8)DAS, Chandan
Address of Applicant :Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India ---------- ----------

(57) Abstract :
Provided herein is a molecular catalyst for reversible CO2/CO conversion comprising a multi-functional redox-active ligand framework around a copper core. The molecular catalyst is bis-(2-(phenylazo)pyridine)[PAP] copper(I) perchlorate or bis-(6-amino-2(phenylazo)pyridine) [APAP] copper(I) perchlorate. The molecular catalyst complex exhibits reversible catalysis via both electrochemical and chemical pathways. Also provided herein is a method for preparing the molecular catalyst.

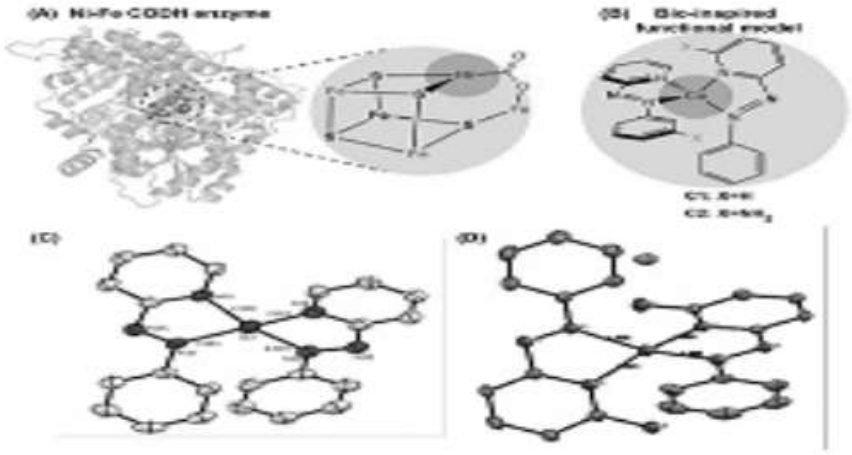


Figure 1

No. of Pages : 55 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/03/2022

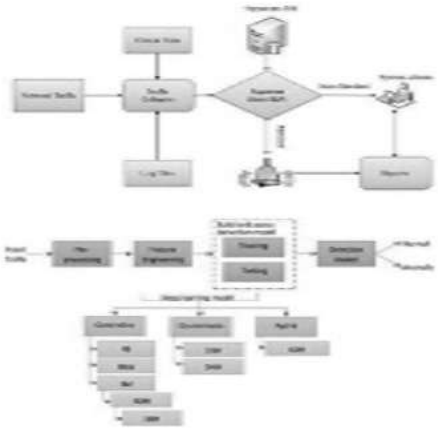
(21) Application No.202221011333 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AI AND MACHINE LEARNING BASED ANOMALIES DETECTION AND INTRUSIONS SYSTEMS IN COMMUNICATION NETWORKS

(51) International classification :H04L0029060000, G06F0021550000, G06N0020000000, G06N0005000000, G06N0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Vikram Sadashiv Gawali
Address of Applicant :Assistant Professor Government College of Engineering, Chandrapur Pin: 442403 State: Maharashtra Country: India ---------- ----------
2)Yogesh Gurav
3)Rashmi Sameer Deshpande
4)Deepali Kolte
5)Rutuja Vivek Tikait
6)Sridhar Reddy Vulapula
7)N. Srinivas
8)Bhagyashree Ashok Tingare
9)Bidwe Mandar maruti
10)Aman Kamble
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vikram Sadashiv Gawali
Address of Applicant :Assistant Professor Government College of Engineering, Chandrapur Pin: 442403 State: Maharashtra Country: India ---------- ----------
2)Yogesh Gurav
Address of Applicant :State: Maharashtra Country: India ---------- ----------
3)Rashmi Sameer Deshpande
Address of Applicant :Assistant professor Dr D Y Patil Institute of Engineering Management and Research Akurdi Pune, Pin:411035 State: Maharashtra Country: India ---------- ----------
4)Deepali Kolte
Address of Applicant :Assistant Professor DYPCOE, Akurdi Pune Pin:411044 State: Maharshtra Country:India ---------- ----------
5)Rutuja Vivek Tikait
Address of Applicant :Assistant Professor DYPCOE, Akurdi Pin:411044 State: Maharashtra Country:India ---------- ----------
6)Sridhar Reddy Vulapula
Address of Applicant :Associate Professor Vignana Bharathi Institute of Technology , Hyderabad Pin: 501301 State: Telangana Country: India ---------- ----------
7)N. Srinivas
Address of Applicant :Associate Professor, CSE dept Vignana Bharathi Institute of Technology, Ashapur, Ghakesar. Pin: 501301 State: Telengana Country: India ---------- ----------
8)Bhagyashree Ashok Tingare
Address of Applicant :Assistant professor DYP COE Akurdi pune Pin:411044 State: Maharashtra Country: India ---------- ----------
9)Bidwe Mandar maruti
Address of Applicant :Assistant Professor Dr. Vithalrao Vikhe Patil College of Engineering, Vilad Ghat , Ahmednagar Pin: 414111 State: Maharashtra Country: India ---------- ----------
10)Aman Kamble
Address of Applicant :Assistant Professor DYP COE Akurdi Pune Pin:411044 State: Maharashtra Country: India ---------- ----------

(57) Abstract :
AI and Machine learning based Anomalies Detection and Intrusions systems in Communication Networks Abstract: Network Anomaly Detection Systems are critical for preventing network hacking (NADSs). Malware in network traffic data has significantly changed. As a result, standard network security approaches and processes are rendered useless at defending against assaults. We demonstrate how to use a two-phase approach to locate and characterise problems in this article. When eleven algorithms were compared against the identical set of data, the Random Forest technique emerged as the winner. The RF is used to detect abnormalities and to create a new characteristic dubbed attack-or-not. If we provide the Neural Network with data that includes the attack-or-not feature, it will have an easier time differentiating between different forms of threats. In this investigation, UNSW-NB15 was employed. It is critical that we do not forget about the network revolution, since it is critical to our ability to connect. Network dangers have also increased as a result of recent internet changes. On the internet, there are far too many modern threats for traditional firewalls to protect against. They must be replaced immediately. A machine defect was discovered to be the cause of the successful attack. Cyber dangers are getting increasingly difficult to detect and track down as they evolve in complexity. Breach of data protection, integrity, and availability, as well as data theft, would be significant problems for intelligence organisations in the near future. The literature contains numerous proposals for Intrusion Detection Systems (IDS). When completed, this paper will provide an overview of current IDS information research and a list of the most often utilised data sets for review. The report discusses the attacks and strategies used by hackers to gain access to and break into networks.



No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/03/2022

(21) Application No.202221011526 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART ASTHMA ATTACK DETECTOR

(51) International classification :A61B0005000000, A61B0005022000, A61B0005110000, G08B0021040000, G16H0040670000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)TRIPTI CHANDA
Address of Applicant :F-104, JASMINIUM, MAGARPATTA CITY, HADAPSAR, PUNE, MAHARASHTRA 411018 MOBILE : +91 9527779436 ---------- ----------
2)AISHWARYA BAPAT
3)APURVA AMRITKAR
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)TRIPTI CHANDA
Address of Applicant :F-104, JASMINIUM, MAGARPATTA CITY, HADAPSAR, PUNE, MAHARASHTRA 411018 MOBILE : +91 9527779436 ---------- ----------
2)AISHWARYA BAPAT
Address of Applicant :A7 1004 KARISHMA SOCIETY, KARVE ROAD, KOTHRUD, PUNE, MAHARASHTRA-411038 MOBILE : +91 9545091077 ---------- ----------
3)APURVA AMRITKAR
Address of Applicant :J 1004,HILLVIEW RESIDENCY, KOTHRUD, PUNE, MAHARASHTRA-411038 MOBILE : +1 (217) 200-1830 ---------- ----------

(57) Abstract :
This invention is an asthma attack detector inspired by the smart health bands that we see around us these days in the healthcare realm but is reminiscent of the Blood Pressure cuff used in a mercury sphygmomanometer. This band was designed keeping in mind the life and times of a chronic asthma patient, for whom an asthma attack could prove fatal. This implies that the band would have to be worn at all times, would need a continuous battery backup, would have to have a simultaneous data transmission and storage, and in all but most essentially should be comfortable enough to be worn at all times. It would also have to be adaptable to a particular patient based on the triggers that that patient experiences. The band in itself would be designed to have an easy to open and close Velcro approach. It would be designed to fit on the upper arm of an average grown human but can be adjusted based on the size and height of the patient. It would also have a certain amount of padding to make it comfortable to wear and avoid direct contact with the electronic components of the band. The band could also include a GSM module that would send a message to an emergency contact if a person is having an attack. It could also send an alert to all the medical personnel available nearby or within reach. It could also incorporate a GPS module to send out the exact location of the patient while sending out the alerts. A mobile application can be made to store logs which will include the time and date and severity of the attack. Because of this log, time, triggers and patterns of the attack can be understood and further medical actions can be taken. They could also be transferred directly to the cloud, using an IoT platform, so that the patient would be able to log into the files from anywhere and access the data whenever required. This data could also be shared with medical personnel to make handling the patient's case easier.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/03/2022

(21) Application No.202221011578 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR LOCAL BUSINESS TO ADVERTISE PROMOTIONAL OFFERS BASED ON PERSONALIZED AND VISITING LOCATION USING MACHINE LEARNING MODEL

(51) International classification :G06Q0030020000, G06N0020000000, H04W0004020000, G06Q0010040000, H04W0004024000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Vinayak Dagadu Shinde
Address of Applicant :Associate Professor, Department of Computer Engineering, Shree L.R Tiwari College of engineering, Mira Road East, Thane 401107, Maharastra ---------- ----------
2)Deepak Kumar Choudhary
3)Mr. Rajesh Laxman Gaikwad
4)Nitish Kumar
5)Shweta Kumari
6)Dr.Jagriti singh
7)Akhilesh Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Vinayak Dagadu Shinde
Address of Applicant :Associate Professor, Department of Computer Engineering, Shree L.R Tiwari College of engineering, Mira Road East, Thane 401107, Maharastra ---------- ----------
2)Deepak Kumar Choudhary
Address of Applicant :Assistant Professor Department of Computer Science Engineering Darbhanga college of Engineering, Darbhanga , Bihar ---------- ----------
3)Mr. Rajesh Laxman Gaikwad
Address of Applicant :Assistant Professor, Department of Computer Engineering, Shree L R Tiwari College of Engineering, Mira Road, 401107, Maharastra ---------- ----------
4)Nitish Kumar
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Darbhanga College of Engineering, Darbhanga, Bihar ---------- ----------
5)Shweta Kumari
Address of Applicant :Assistant Professor Department of Computer Science Engineering Darbhanga college of engineering Darbhanga, Bihar ---------- ----------
6)Dr.Jagriti singh
Address of Applicant :Assistant Professor Department of Management RKGIT Ghaziabad, UP ---------- ----------
7)Akhilesh Kumar
Address of Applicant :Assistant Professor Department of Computer Science Engineering Darbhanga College of Engineering Darbhanga,Bihar ---------- ----------

(57) Abstract :
ABSTRACT The present invention relates to an advertisement system for providing personalized and visiting location based promotional offers related to nearby location using machine learning model. The objective of present invention is to solve the anomalies presented in the prior art techniques and using advanced technique for providing advertisements to the consumers of the nearby business based on the current or visiting location and consumers/customers browsing history using machine learning model. Customers often going for market for buying something from the market need to wander here and there in the market for searching for relevant shops in the market and getting the searched article at a reasonable price. Further, consumers often search for the products or article in their phone before buying in the market. Hence, the proposed invention recommends the products based on the browsing history of the consumer along with providing the promotional offers from the nearby shops of the current location of the consumer using machine learning model. The proposed invention captures the location of the consumers from the GPS sensor of the mobile terminal. The proposed invention first registers the business and maintains a database of the registered business on the server along with location of the registered business. The registered business periodically updates or adds the promotional offers related to the product of their businesses. The proposed invention comprises a central server which is based on machine learning model. The said machine learning model is trained using initial database of the related category and test cases. The central server dynamically or periodically monitors the browsing history of the consumers which are analyzed by the machine learning model at the central server in consultation with the registered businesses. Further, the central servers dynamically monitor the location of the consumers based on the location available through the GPS sensor of the mobile terminal of the consumer. Every aspect of the registered businesses, location and browsing history of the consumer is analyzed by the machine learning model of the said system. The whole process of said advertisement system is automatic and dynamic in nature. Further, the central server based on the browsing history of the consumer, current location of the consumer captured through the mobile terminal, promotional offers of the registered business in the vicinity of current location of the consumer provides or recommends or provides the advertisement to the consumer using the analysis of the machine leaning model. The said machine learning model is adaptive and self-learning in nature and the recommendations or advertisement to the consumers are more relevant and precise with time. Thus, using the advanced technology of machine learning model, the consumers or customers will get the information related to the products along with best promotional offers available on the required product in the current location of the consumer. The proposed advertisement system is fully automatic, dynamic in nature and helps the consumers in providing the required products with best available cost quickly and efficiently.

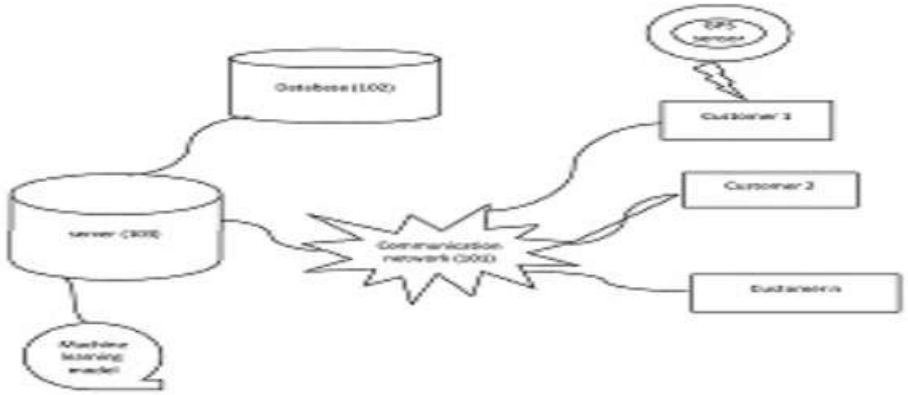


Figure 1: Block diagram a system for Local business to advertise promotional offers based on personalized and visiting location using machine learning model

No. of Pages : 24 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/03/2022

(21) Application No.202221011703 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NANOPARTICLE DOPED FULLERENE AS CRYO-ELECTRON MICROSCOPY BIOMARKER, & METHOD OF PREPARATION THEREOF

(51) International classification :G16B0015000000, G01N0033543000, C07K0014005000, C12Q0001020000, B82Y0030000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Narsee Monjee Institute of Management Studies (NMIMS)
Address of Applicant :Indore Campus, Off. Super Corridor, Village - Bada Bangarda, Tehsil – Hatod, District - Indore, Pin Code - 453112, Madhya Pradesh ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Munendra Jain
Address of Applicant :Associate Professor, School of Studies, Narsee Monjee Institute of Management Sciences, Indore Campus ---------- ----------
2)Priti Jain
Address of Applicant :Assistant Professor, Department of Pharmaceutical Chemistry, School of Pharmaceutical Sciences, Delhi Pharmaceutical Sciences and Research University, New Delhi ---------- ----------

(57) Abstract :
The present invention relates to nanoparticle doped fullerene as cryo-electron microscopy biomarker, & method of preparation thereof . The objective of the present invention is to solve the problems in the prior art related to poor signal response of bio- molecular structures in the cryo-EM. The present invention discussed here encapsulates Au to fullerene (C60), enhancing cryo-EM's electromagnetic response and structural analysis capability.

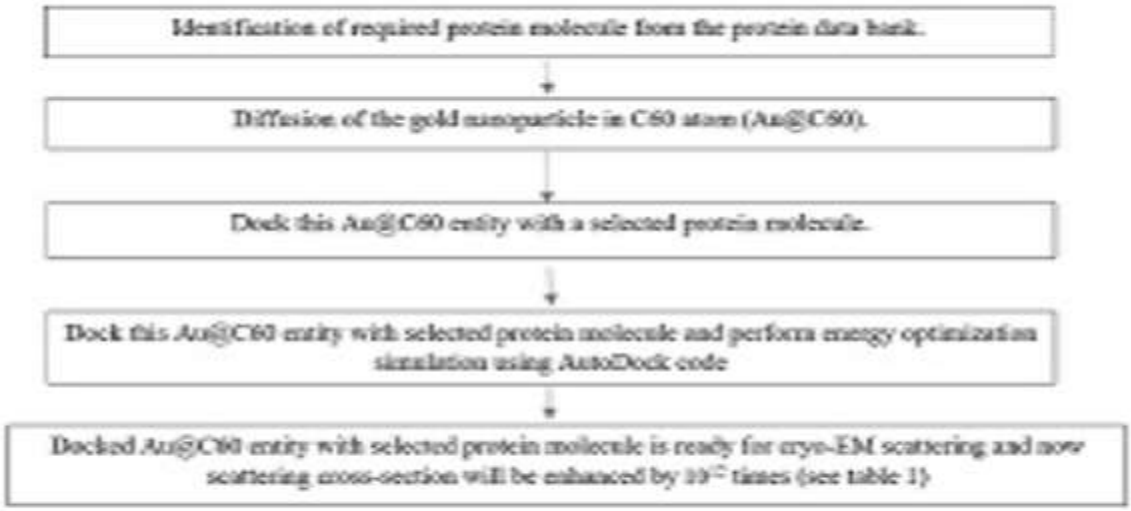


FIGURE 1

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/03/2022

(21) Application No.202221011722 A

(43) Publication Date : 15/04/2022

(54) Title of the invention : AN EFFICIENT CONTENT BASED REMOTE SENSING IMAGE RETREIVAL USING ARTIFICAL NEURAL NETWORK

(51) International classification :G06K0009000000, G06N0003040000, G06N0003080000, G06N0003020000, H04L0029080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR.NAVEEN M
Address of Applicant :A1-304, SHREYAS SOCIETY, PUNAWALA, PUNE - 411033, MAHARASHTRA, INDIA. ---------- ----------
2)DR.MOHAN H S
3)MRS.SMITHA S P
4)MR.ABHIJIT DAS
5)MRS.PRADEESHA J
6)MAMATHA B
7)AKSHATHA R HEGDE
8)PADMAVATHI H G
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR.NAVEEN M
Address of Applicant :A1-304, SHREYAS SOCIETY, PUNAWALA, PUNE - 411033, MAHARASHTRA, INDIA. ---------- ----------
2)DR.MOHAN H S
Address of Applicant :SJB INSTITUTE OF TECHNOLOGY,UTTARAHALLI ROAD,KENGERI,BANGALORE 60 ---------- ----------
3)MRS.SMITHA S P
Address of Applicant :DOOR#788,2 ND MAIN,CHOWDESHWARI LAYOUT,MARATHALLI.PIN-560037 ---------- ----------
4)MR.ABHIJIT DAS
Address of Applicant :BNM INSTITUTE OF TECHNOLOGY,12TH MAIN ROAD,27TH CROSS,BANASHANKARI STAGE II,BANASHANKARI,BENGALURU,KARNATAKA-560070 ---------- ----------
5)MRS.PRADEESHA J
Address of Applicant :FLAT NO:136,MAHAVEER RICH APARTMENT,AGB LAYOUT,CHIKKABANAVARA,BENGALURU-560090 ---------- ----------
6)MAMATHA B
Address of Applicant :POOJYA DODDAPPA APPA COLLEGE OF ENGINEERING,AIWAN -E-SHAHI AREA,SHAMBHOGNLLI,GULBARGA,KARNATAKA-585102 ---------- ----------
7)AKSHATHA R HEGDE
Address of Applicant :R.R INSTITUTE OF TECHNOLOGY,RAJA REDDY LAYOUT,HESARGHATTA MAIN RD,CHIKKABANAVARA,BENGALURU,KARNATAKA-560090 ---------- ----------
8)PADMAVATHI H G
Address of Applicant :BRINDAVAN COLLEGE OF ENGINEERING,BAGALUR MAIN RD,VIJAYNAGAR,YELAHANKA,BENGALURU,KARNATAKA-560063 ---------- ----------

(57) Abstract :
Remote sensing is being used in different fields like agriculture, research etc. Remote sensed images contain complex visual contents. This paper explains about the content based remote sensing image retrieval using ANN. In remote sensing method the sensors which will be fixed on an aircraft or satellite is used for capturing remote sensing images. Due to the increase in the use of remote sensing technology and also the number of satellites used, the volume of image dataset is increasing exponentially. Content Based Remote sensing Image Retrieval is used as to reduce the difficult in managing large volume of earth data.

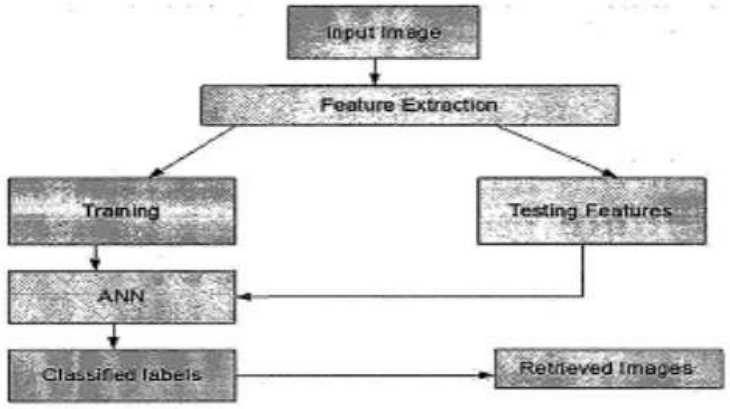


Fig 1. Block Diagram

No. of Pages : 7 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/03/2022

(21) Application No.202221011723 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TEXT SUMMARIZATION AND DIMENSIONALITY REDUCTION USING LEARNING APPROACH

(51) International classification :G06N0003080000, G06F0021570000, G06F0016340000, F02D0041240000, G10L0015220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)MR.BALARAJU G
Address of Applicant :A1-304, SHREYAS SOCIETY, PUNAWALA, PUNE - 411033, MAHARASHTRA, INDIA. ---------- ----------
2)MR.ABHILASH L BHAT
3)MRS.VEENA V
4)MRS.GEETHA R
5)MR.RANJITH V
6)MR.CHIDANANDA K
7)MRS.PRATHIMA M G
8)MRS.DEEPASHREE N
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MR.BALARAJU G
Address of Applicant :A1-304, SHREYAS SOCIETY, PUNAWALA, PUNE - 411033, MAHARASHTRA, INDIA. ---------- ----------
2)MR.ABHILASH L BHAT
Address of Applicant :SHASTRY BHAVAN,HERUR,KUNIGAL,TUMKUR-572130 ---------- ----------
3)MRS.VEENA V
Address of Applicant :UNNATI,#554/A,13TH MAIN,M S RAMAIH ENCLAVE,NAGASANDRA POST,BENGALURU-560073 ---------- ----------
4)MRS.GEETHA R
Address of Applicant :#S1,SHIVAGANGA PARKVIEW APPT,CHENNAMMA GARDEN,RAGHUVANAHALLI,KANAKPURA ROAD,BENGALURU-560109 ---------- ----------
5)MR.RANJITH V
Address of Applicant :BOMMANAHALLI,HANABE POST,DODDABALLAPURA TALK,BENGALURU RURAL DISTRICT-561203 ---------- ----------
6)MR.CHIDANANDA K
Address of Applicant :C/O DR,KAVADIKI VEERABHADRAPPA,#736,2 ND FLOOR,HARSHA NILAYA,8 TH MAIN,8TH CROSS,HAMPI NAGAR,RPC LAYOUT,VIJAYANAGAR 2ND STAGE,BENGALURU-560104 ---------- ----------
7)MRS.PRATHIMA M G
Address of Applicant :#287,1ST FLOOR,5TH CROSS,AVALAHALLI BDA LAYOUT,GIRINAGAR,BANGALORE-85 ---------- ----------
8)MRS.DEEPASHREE N
Address of Applicant :#82 HARIHARA ROAD VASANTHAPURA SUBRAMANYA PURA POST BANGALORE-560061 ---------- ----------

(57) Abstract :
The main goal of using recommendation systems is to gain the productivity of developer by recommending files to edit. Association rules mining is done for such in software revision histories. However, mining coarse-grained rules using only edit histories produces recommendations with low accuracy, and can only generate recommendations after a developer edits a file. The existing methods presented are falls in two categories such as view history based mining or edit history based mining. But due to the less accuracy, more time for generating recommendations, there is always research problem in this domain whether which history is better to mine. To overcome these limitations, recently MI [15] technique is presented to produce recommendations from both view and edit histories. This method practically showing better accuracy, flexibility and speed, but there is no end user satisfaction achieved with this method. This becomes research challenge in this domain. The research gaps identified in present works are: - Computation efforts and costs are higher Lack of programmers suggestions on present recommendation results. - Late recommendations generated for particular error solving due to size of error log history database. Inefficient and no flexibility supported.

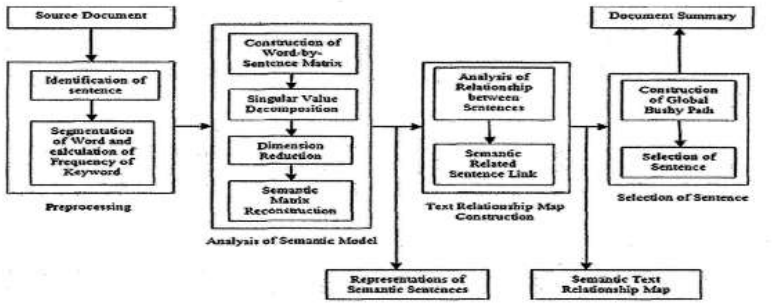


Fig 11: Work Flow

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/03/2022

(21) Application No.202221011792 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL FORMULATION COMPRISING SILICA COATED NANO-LIPID VESCICULAR SYSTEM FOR ORAL DELIVERY OF CHORIOGONADOTROPIN ALFA

(51) International classification :A61K0047260000, A61K0009000000, A61K0047120000, A61K0009510000, A61K0047240000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DHAVALKUMAR BHARATBHAI PRAJAPATI
Address of Applicant :538 The Gokulesh City Bhd Khatamba Village Shankarpura Waghodia Road Vadodara ---------- ----------
2)Viral Hareshkumar Shah
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Viral Hareshkumar Shah
Address of Applicant :16 B Gulabpark Banglows Besides gulab tower Thaltej Ahmedabad ---------- ----------
2)Ms. Amee Jobanputra
Address of Applicant :16B Gulab Park Banglows Next to Gulab Tower Thaltej Ahmedabad 380061 ---------- ----------
3)Ms. Pratiksha Kochar
Address of Applicant :16B Gulab Park Banglows Next to Gulab Tower Thaltej Ahmedabad 380061 ---------- ----------

(57) Abstract :
The present invention relates to a novel formulation for oral delivery of choriogonadotropin alfa for effective management and treatment of women's reproductive infertility. In particular, the novel formulation comprises a saturated fatty acid engineered and silica-coated nano-lipid vesicular system for oral delivery of choriogonadotropin alfa. The invention also relates to the process of preparing such formulation which is stable, non-toxic, and efficient for oral delivery and its use for the effective treatment and management of reproductive in-fertility in women.

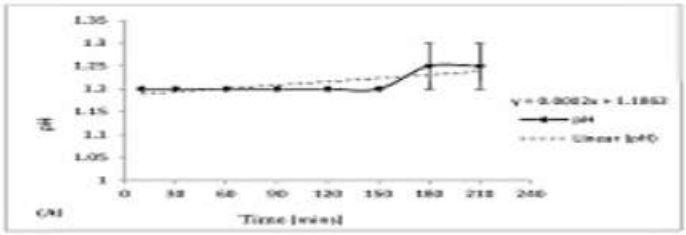


Figure 1: Stability studies of silica coated DPPC based NLVs under simulated physiologic conditions A) medium of pH 1.2, B) medium of pH 7.4.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/03/2022
(21) Application No.202221011795 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PYROELECTRIC AND PIEZOELECTRIC ENERGY SOURCES FOR REAL-TIME DIRECT CELL BALANCING IN BATTERY PACK USING SUPERCAPACITORS

(51) International classification :H02J0007000000, H02N0002180000, H01L0041113000, A61Q0019000000, A61K0008020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)MR.PATRICK JAMES NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------
2)MRS.MICHELLE MARIE NOLAN
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MR.PATRICK JAMES NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------
2)MRS.MICHELLE MARIE NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------

(57) Abstract :

Abstract: The present invention is a pyroelectric and piezoelectric energy sources for real-time direct cell balancing in battery pack using supercapacitors, comprises of, a harvested electrical energy (4) via, pyroelectric and piezoelectric materials/layers/generators using pyroelectric effect, thermocouples using Seebeck effect, used in battery pack and piezoelectric footstep generators used in, it is stored in energy storage devices like the supercapacitor bank (5) and utilizing it for real-time cell balancing purpose in battery pack during charge/discharge cycles. Its use of the pyroelectric materials layer / generator (2) in the battery pack (1) to convert heat into electrical energy and store that in the supercapacitor bank (5), thereby, electrical energy to balance the cells in the battery pack on real-time basis. The pyroelectric materials/layers (2) is a part of the battery pack and they have excellent fire retardant property, thereby, it leads an added advantage in the fire catching events, therein, as the supercapacitor (5) there in the real-time cell balancing circuit (6), this is increase the cell balancing speed and in balancing the farthest corner cells in the battery pack (1).

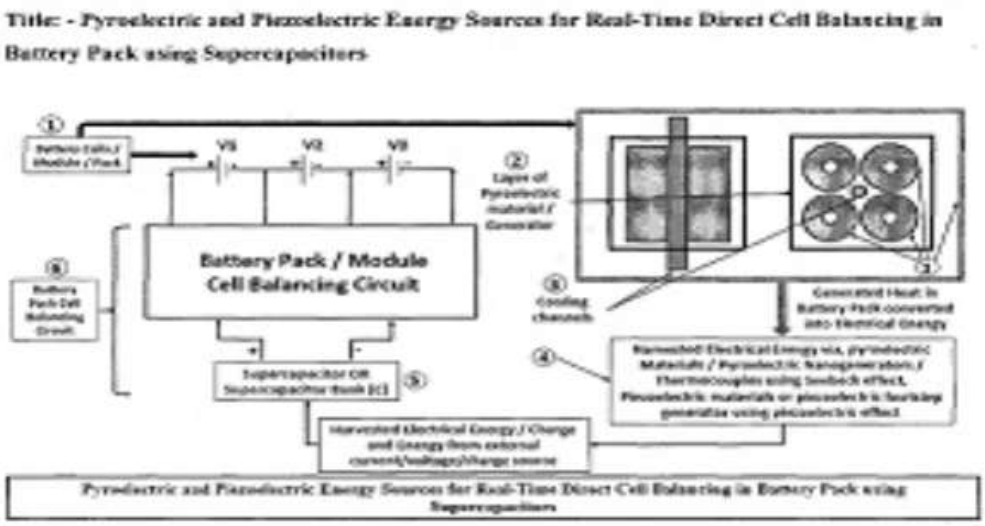


Figure 1

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/03/2022

(21) Application No.202221011798 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RENEWABLE AND REGENERATION ENERGY SOURCES FOR REAL-TIME CELL BALANCING IN BATTERY PACK USING SUPERCAPACITORS.

(51) International classification :H02J0007000000, B01D0053140000, B32B0027320000, A61K0008020000, B60K0006480000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)MR.PATRICK JAMES NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------
2)MRS.MICHELLE MARIE NOLAN
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MR.PATRICK JAMES NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------
2)MRS.MICHELLE MARIE NOLAN
Address of Applicant :AM PFINGSTBORN 40, GLASHUETTEN, GERMANY - 61479. ---------- ----------

(57) Abstract :
Abstract: The present invention is a renewable and regeneration energy sources for real-time cell balancing in battery pack using supercapacitors, comprises of, wherein, a supercapacitor (3) there in the real-time a cell balancing circuit (4), this will increase the cell balancing speed and will help in balancing the farthest corner cells in a battery pack (1). Energy from external current or voltage or charge source, a harvested electrical energy (2) through renewable energy, is stored in energy storage devices like the supercapacitor bank (3) and utilizing it for real-time cell balancing purpose in battery pack during charge or discharge cycles. Charge stored in the supercapacitor bank (3) can be used to power electric vehicle accessories, power take-off units or cooling system and power electronics of battery pack, optimized life of the battery pack (1) by reducing discharge cycles of higher SoC cell by at least 10%.

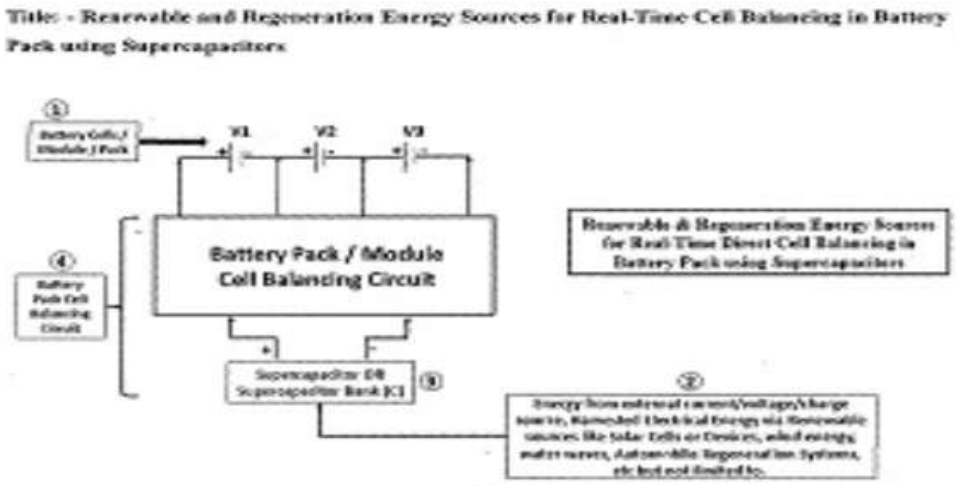


Figure 1

No. of Pages : 12 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/03/2022

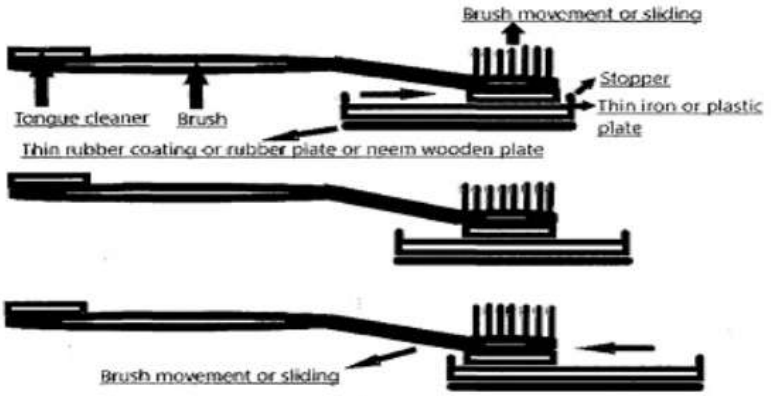
(21) Application No.202221012154 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INSIDE CHEEK PROTECTOR TOOTH BRUSH [ICPTB].

(51) International classification :A46B0015000000, F41C0023140000, A46B0009040000, A46B0007040000, A61C0017260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)KAPIL BABA DEOKATE
Address of Applicant :AT/PO: MEKHALI, TAL.: BARAMATI, DIST.: PUNE, MAHARASHTRA, INDIA - 413 102. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KAPIL BABA DEOKATE
Address of Applicant :AT/PO: MEKHALI, TAL.: BARAMATI, DIST.: PUNE, MAHARASHTRA, INDIA - 413 102. ---------- ----------

(57) Abstract :
Title of the Invention: INSIDE CHEEK PROTECTOR TOOTH BRUSH [ICPTB] Abstract: Brushing teeth is very important to keep teeth clean and mouth fresh. The toothbrush is playing an important role to clean the teeth. After much research, the form and technique of toothbrushes are changed. In the beginning, a simple brush without tongue cleaner is made and in advance, with the tongue cleaner on the head of the toothbrush we see nowadays. Many times shape and size are also changed. Still, something remains which has to be fulfilled the need and so the new invention called Inside cheek protector toothbrush [ICPTB] is invented. This invention satisfies the brushing of teeth because it protects the inside cheek portion by not rubbing and damaging inside the cheek portion and also protects from causing the condition like an ulcer or sometimes cancer-like situation in the mouth. This invention is very useful to those people who have the problem of mouth ulcer and the tobacco eater or such like things because due to tobacco keeping in between the cheek and teeth which damage to the wall of inside cheek portion. In such cases inside cheek protector toothbrush [ICPTB] plays an important role to protect the damage or harm to the inside cheek. So for good performance for regular brushing the Inside cheek protector toothbrush [ICPTC] is very useful to protect the inside portion of the cheek. The tongue cleaner portion was given to the head of the toothbrush is also another reason which damages the inside cheek portion while brushing because of direct contact with the cheek portion causing the rubbing of the inside cheek portion. That's why to avoid such a situation in the case of Inside cheek protector toothbrush [CIPTC] toothbrush the tongue cleaner is given at the tail of the toothbrush which is comfortable.



No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016223 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN AND DEVELOPMENT OF 360 DEGREE WELDING TURN TABLE WITH SCISSOR HEIGHT ADJUSTER

(51) International classification :B23K0009000000, B29C0065000000, G06F0030330000, B23K0031000000, B60R0022200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Bhushan Dattatray Nandre
Address of Applicant :Flat no 504, 7D, Purna Building, Mhada Colony, Morewadi, Pimpri, 411018, Pune. Organization: Modern Education Society's College of Engineering Pune ---------- ----------
2)Neha Sudhakar Salunkhe
3)Swaraj Manohar Bhure
4)Ajit Arjunrao Chaugule
5)Dr. Hemant Krishnarao Wagh
6)RAJKUMAR
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Bhushan Dattatray Nandre
Address of Applicant :Flat no 504, 7D, Purna Building, Mhada Colony, Morewadi, Pimpri, 411018, Pune. Organization: Modern Education Society's College of Engineering Pune ---------- ----------
2)Neha Sudhakar Salunkhe
Address of Applicant :A/P Nagthane, Tal. Dist- Satara Organization: Dept. of SCMS, SPPU, Pune. ---------- ----------
3)Swaraj Manohar Bhure
Address of Applicant :: Mitmita Aurangabad Email: swarajbhure@gmail.com Organization: Dept. of SCMS,SPPU, Pune ---------- ----------
4)Ajit Arjunrao Chaugule
Address of Applicant :: Dhanori, Pune. Organization: Modern Education Society's College of Engineering Pune ---------- ----------
5)Dr. Hemant Krishnarao Wagh
Address of Applicant :Indira Colony, Deopur, Dhule Organization: R C Patel Institute of Technology, Shirpur. ---------- ----------
6)RAJKUMAR
Address of Applicant :WAGHOLI,pune-412207 Details of Organization: PG MOZE College of Engineering, WAGHOLI. ---------- ----------

(57) Abstract :
ABSTRACT [500] Our Invention Design and Development of 360 Degree Welding Turn Table with Scissor Height Adjuster is a deals with the procedure of designing the 360-degree welding turn table with scissor height adjuster. This 360-degree turn table can be rotated as convenient to the welder using worm and worm gear arrangement. Rotation allows better reach but would not really reduce fatigue if the welder had to bend every time, he had to weld something. The second part of this product is a scissor height adjuster that allows the user to increase or decrease the height of the table using linked, folding supports in a crisscross pattern. Invention involves technical characteristics, design considerations, calculations of worm and worm gear, scissor mechanisms and hydraulic cylinder. Also gives the idea of materials used for components according to the task they perform. A 3-D model is created and simulated. As a result of analysis, it concludes that the table designed could safely be used for welding operations.

FIGURE 1. 360-degree turn table.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016224 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADVANCEMENT IN HEALTHCARE TECHNOLOGIES, PRACTICES & METHODS TO ENHANCE PREVENTIVE ORAL CARE.

(51) International classification :G06Q0050220000, G16H0040200000, A61C0019000000, G16H0010600000, A61G0015100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Rishil Trivedi
Address of Applicant :General Dentist ,13, 3A Shyamal Row House Shyamal Cross Roads , Ahmedabad , Gujarat – 380015 ---------- ----------
2)Dr. Nupur Trivedi
3)Dr. Pradnya S Jadhav
4)Dr. Khushboo Kalani
5)Dr. Shantun Malhotra
6)Dr. A. Selvabalaji
7)Dr. Neelam Das
8)Dr. Rohini Patil
9)Dr. Khushboo Rastogi
10)Bhakti Porwal
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Rishil Trivedi
Address of Applicant :General Dentist ,13, 3A Shyamal Row House Shyamal Cross Roads , Ahmedabad , Gujarat – 380015 ---------- ----------
2)Dr. Nupur Trivedi
Address of Applicant :Prosthodontist & Implantology ,E-401, Asavari Towers Behind Wide Angle , Ahmedabad, Gujarat - 380015 ---------- ----------
3)Dr. Pradnya S Jadhav
Address of Applicant :Assistant Professor, Department of Public Health Dentistry, Government Dental College and Hospital, Aurangabad. ---------- ----------
4)Dr. Khushboo Kalani
Address of Applicant :Government Dental College and Hospital Nagpur, Maharashtra (Graduated). ---------- ----------
5)Dr. Shantun Malhotra
Address of Applicant :Reader, Department of Endodontics, SGRD Dental College Amritsar ---------- ----------
6)Dr. A. Selvabalaji
Address of Applicant :Reader, Department of Pedodontics and Preventive dentistry, Adhiparasakthi dental college and hospital, Melmaruvathur, Chennai- 603319. ---------- ----------
7)Dr. Neelam Das
Address of Applicant :Assistant Professor, Department of Periodontics, Rama Dental College Hospital and Research Centre, Kanpur, Uttar Pradesh. ---------- ----------
8)Dr. Rohini Patil
Address of Applicant :Department of Public Health Dentistry, Associate Professor CSMSS Dental College, Aurangabad. ---------- ----------
9)Dr. Khushboo Rastogi
Address of Applicant :Professor and Head of Department, Saraswathi Institute of Medical Sciences, UP, India. ---------- ----------
10)Bhakti Porwal
Address of Applicant :Final Year BDS Student, Rural Dental College, Loni, India. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Advancement in Healthcare Technologies, Practices & Methods to enhance Preventive Oral Care is a The focalized powers of increasing expenses, developing commercialization, costly new therapies, sociodemographic moves and expanding wellbeing differences are applying serious and impractical tensions on medical care frameworks. Likewise with the other wellbeing areas, these troublesome powers request new methodologies and conveyance models for oral medical services. Mechanical developments and practices acquired from the web based business and tech areas could work with the transition to a feasible 21st century oral medical care framework, one that conveys top caliber, esteem based care to more extensive gatherings of patients. The wide reach of portable innovations and changing advanced ways of life give extraordinary chances to utilizing remote observing and taking care of oneself instruments to build up preventive oral cleanliness practices. By utilizing large information examination and bits of knowledge gathered from the utilization of sensor-empowered oral consideration gadgets, suppliers will actually want to connect with patients all the more really and convey ideal, customized conduct bumps to help ideal oral wellbeing. Dental guarantors and payers should rehash their plans of action to boost dental suppliers and patients who embrace the advanced dentistry worldview. This could include expanding repayments for mHealth-conveyed preventive dental administrations and considering people responsible for practices that put them at higher gamble for dental infection. While Dentistry 1.0 was characterized to a great extent by the treatment of laid out dental infection, Dentistry 2.0 forecasts another time of patient-driven, innovation empowered, results driven, and counteraction centered oral medical care conveyance with huge individual, supplier and cultural advantages.

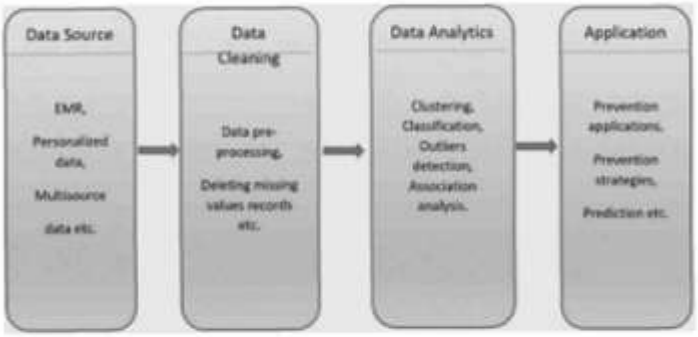


Fig.1: **Healthcare Technologies, Practices & Methods to enhance Preventive Oral Care.**

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016225 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DRY – STORAGE – CABINET

(51) International classification :E04B0001700000, G21C0019060000, F25D0017040000, C23C0014200000, B01D0053260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Skeeriti Asset LLP
Address of Applicant :RH II, L-37, Sector 6, Vashi-400703 Mubai, Mumbai city Maharashtra, India. ---------- ----------
2)Mr Nikhil D. Hadap
3)Dr. Arti Hadap
4)Dr. Tusharika Banerjee
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr Nikhil D. Hadap
Address of Applicant :Pravah: RH-IV. L-5, Lane 5, Sector 9, CBD Belapur, Navi Mumbai, Dist. Thane. Maharashtra, PIN 400614, India. ---------- ----------
2)Dr. Arti Hadap
Address of Applicant :Faculty At BSH Department, MPSTME, NMIMS, Bhakti Vedant Swami Marge, Near Cooper Hospital, JVPD Scheme, Vile Parle (W), Mumbai, Maharashtra, Pin 400056, India. ---------- ----------
3)Dr. Tusharika Banerjee
Address of Applicant :Faculty at EXTC Department, Pillai Coellege of Engineering , Dr K M. Vasudevan Pillai's Campus Plot No. 10, Sctor 16, New Panvel, Dist Raigad. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Dry-Storage Cabinet is a facility for dry-stockpiling to increase longevity of the stock, by protecting it from dampness & also by removing any earlier dampness. The enclosure is equipped with thermo-mechanical-refrigeration assemblies that incorporates heat-cool-condensation cycle to dislodge & remove moisture out of the stock. The equipment has three compartments. The primary-compartment, the largest one is for storing stock that is to be dried or to be kept dry. The primary compartment is equipped with electric space-heaters, to dislodge & vaporize any moisture present in the stock. The second-compartment is equipped with small, thermally-insulated refrigeration device with suction-exhaust assembly, which takes the air in from the primary-compartment and make it pass through the refrigerated surfaces, in order to condense & collect moisture. The dried air is then injected back into the primary or stockpiling compartment. The third compartment is located outside of the cabinet that collects the dislodged moisture in the form of liquid water. Our dry-storage cabinet is useful for stocking grains, dry-fruits & any dry eatable, electronics and optics.

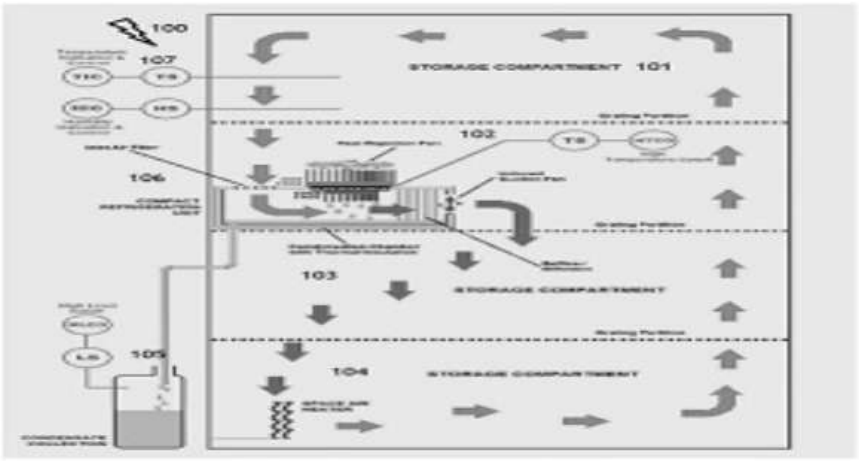


Fig 1: Dry – Storage – Cabinet – Process.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016226 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN AND DEVELOP NEON MATERIALS FOR COVID 19

(51) International classification :G06Q0050220000, G09B0019000000, G01N0033500000, C12N0005071000, H01F0001010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Shroff S.R. Rotary Institute of Chemical Technology (SRICT), UPL University of Sustainable Technology
Address of Applicant :Block No: 402, Valia Rd, Ankleswar, 393135, Gujarat, India ---------- ----------
2)Lovely Professional University
3)KJR College of Pharmacy
4)Lingaya's Vidyapeeth
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Swapna Rekha Panda
Address of Applicant :Associate Professor and R&D Coordinator, Department of Chemical Engineering, Shroff S.R. Rotary Institute of Chemical Technology (SRICT) UPL University Of Sustainable Technology, Block No: 402, Ankleshwar - Valia Rd, Ankleswar, Gujarat, 393135, India. ---------- ----------
2)Dr. Sudeep Asthana
Address of Applicant :Associate Professor & Training Placement Officer, School of Chemical Engineering & Physical Sciences, Lovely Professional University, Jalandhar - Delhi G.T. Road, Phagwara, 144411, Punjab, India. ---------- ----------
3)Dr. Chandan Kumar Brahma
Address of Applicant :Professor, Department of Pharmaceutics KJR College of Pharmacy, Burugupudi, Korukonda, Rajahamudry 533292, Andhra University, A.P, India. ---------- ----------
4)Dr. Deepa Srivastava
Address of Applicant :Associate Professor, Department of Civil Engineering, Lingaya's Vidyapeeth, Nachauli, Jasana Road, Old Faridabad, Haryana 121002, India. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Design and Develop Neon Materials for COVID 19 is a continuous SARS-CoV-2 pandemic features the significance of materials science in giving instruments and innovations to antiviral examination and treatment advancement. In this Review, we examine past endeavors in materials science in creating imaging frameworks and microfluidic gadgets for the inside and out and constant examination of viral constructions and transmission, as well as material stages for the recognition of infections and the conveyance of antiviral medications and immunizations. We feature the commitment of materials science to the assembling of individual defensive gear and to the plan of straightforward, precise and minimal expense infection identification gadgets. We then explore future prospects of materials science in antiviral examination and therapy improvement, inspecting the job of materials in antiviral-drug configuration, including the significance of engineered material stages for organoids and organs-on-a-chip, in drug conveyance and inoculation, and for the creation of clinical gear. Materials-science-based advancements not just add to the continuous SARS-CoV-2 exploration endeavors however can likewise give stages and devices to the arrangement, security, discovery and treatment of future viral illnesses.

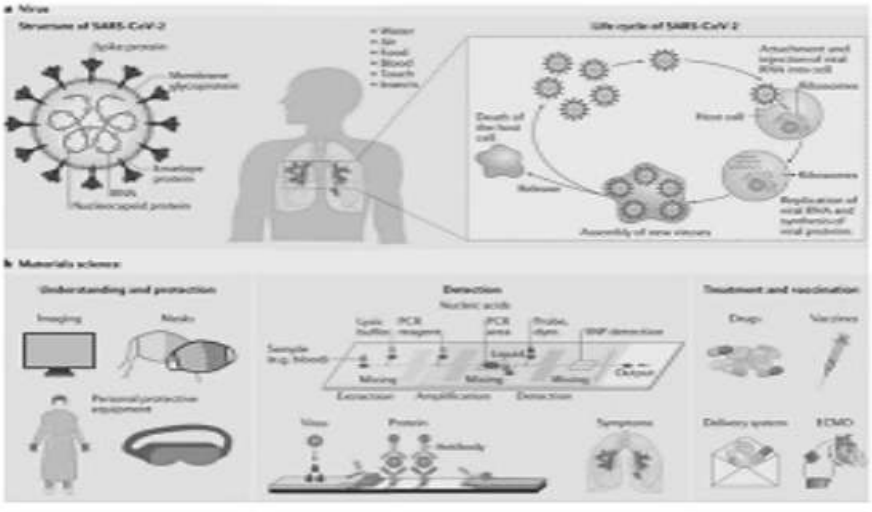


Fig.1: Design and Develop Neon Materials For COVID 19 , Stage

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016227 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IN-SITU IOT CLOUD BASED CONCRETE MATURITY-STRENGTH MEASUREMENT SYSTEMS FOR REAL TIME CONCRETE STRENGTH MONITORING AND PREDICTION

(51) International classification :G01N0033380000, H04L0029080000, G01K0001020000, G06Q0050080000, G01K0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Deepak Shivram Kumbhar
Address of Applicant :Modern College Of Arts, Science & Commerce Ganeshkhind. Pune-16, MH, India. ---------- ----------
2)Ramakant Vasant Bhujbal
3)Prasad Pashankar
4)Modern College of Arts Science & Commerce Ganeshkhind Pune
5)Prof. Mahendra D.Shirsat
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Deepak Shivram Kumbhar
Address of Applicant :Modern College Of Arts, Science & Commerce Ganeshkhind. Pune-16, MH, India. ---------- ----------
2)Ramakant Vasant Bhujbal
Address of Applicant :Director, Future Chip Technologies, Pune, MH, India. ---------- ----------
3)Prasad Pashankar
Address of Applicant :Software Engineer, Future Chip Technologies, Pune, MH,. ---------- ----------
4)Prof. Mahendra D.Shirsat
Address of Applicant :Professor (Dept of Physics); Head (Department of Electronics) Director, (RUSA Centre for Advanced Sensor Technology), Dr. Babasaheb Ambedkar Marathwada University, Aurangabad – 431004 ---------- ----------

(57) Abstract :
ABSTRACT Our Invention In-situ IoT Cloud Based Concrete Maturity-strength Measurement Systems for Real Time Concrete strength Monitoring and Prediction is to a Wireless Embedded Maturity-Strength Measurement System (WE-MSMS) is designed and developed using digital DS18B20 Temperature Sensor array probe, microcontroller and Zig-Bee network with application software for maturity-strength measurement by non-destructive approach to estimate the in-situ concrete compressive strength of structure. A portable Wireless Temperature Sensor node with Zig-Bee network can be placed at construction site in the fresh concrete initially. Four-Sensor Nodes GUI Java platform based Application software is designed and used in the main server. In each sensor node there are eight- digital DS18B20 Temperature Sensors. For the measurement DS18B20 Temperature Sensor array probe embed into the fresh concrete, each DS18B20 Temperature Sensor with unique code is recorded and maintain in the database at main server. Thereafter every 5-minute or according to time setting till 28-days, time-temperature updated information will recorded in the central database using Zig-Bee network and IoT cloud. The designed system is useful for civil engineer to real-time prediction of in-situ concrete compressive strength at anytime and anywhere with the help of wireless technologies and IoT cloud which decide in-place grading of concrete in concrete construction work. Wireless maturity-strength measuring systems (WE-MSMS) can be implemented on different construction sites and connected with IoT cloud for real-time prediction of in-situ concrete compressive strength.

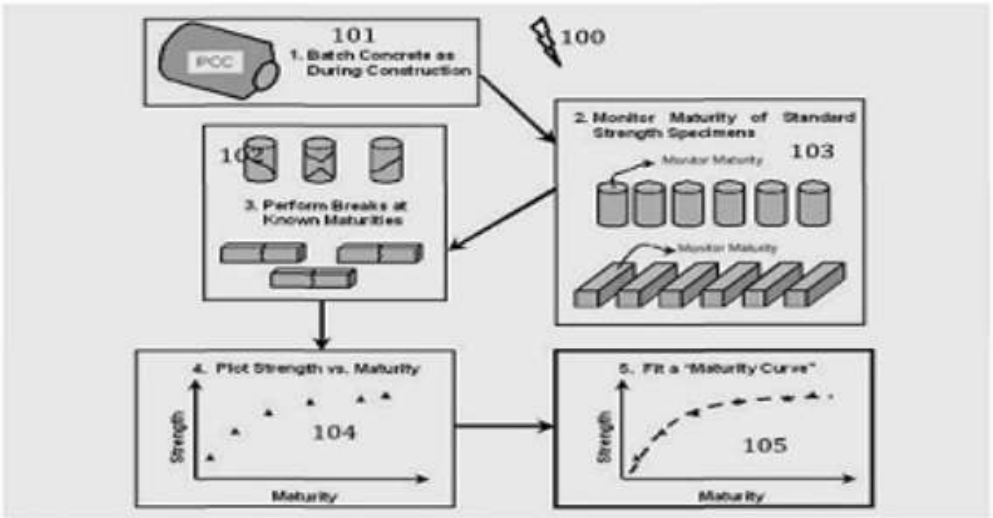


FIG.1: In-situ IoT cloud Based Concrete Maturity-Strength Measurement Systems flow chart (Prior Art Search)

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202221016228 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTEGRATED SYSTEM TO PROVIDE THE HEALTHCARE FOR EMERGENCY PATIENT

(51) International classification :G06Q0050220000, G16H0040200000, H04L0012660000, G08B0025010000, G06Q0050260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr. Bhushan Nandwalkar
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
2)Dr. Makrand Shahade
3)Mr. Khalid Alfatmi
4)Mr. Tukaram Gawali
5)Mr. Ashish Awate
6)Ms. Vijaylaxmi Bittal
7)Ms. Mayuri Kulkarni
8)Mr. Umakant Mandawkar
9)Mr. Ranjit Fule
10)Ms. Rewa Desale
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Bhushan Nandwalkar
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
2)Dr. Makrand Shahade
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
3)Mr. Khalid Alfatmi
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
4)Mr. Tukaram Gawali
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
5)Mr. Ashish Awate
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
6)Ms. Vijaylaxmi Bittal
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
7)Ms. Mayuri Kulkarni
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
8)Mr. Umakant Mandawkar
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
9)Mr. Ranjit Fule
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------
10)Ms. Rewa Desale
Address of Applicant :SVKM'S Institute of Technology, Dhule, Maharashtra 424001, India ---------- ----------

(57) Abstract :
ABSTRACT [500] Our Invention Integrated System to Provide the Healthcare for Emergency Patient is a Healthcare emergency becomes risky when the emergency patients won't get healthcare facility in time and in a proper way. Surveys done by private NGO's, the reports generated by government proves that people/ citizen of India won't get healthcare facility in time because of un-awareness about doctor's list, hospitals services. According to various articles published by newspapers and news shown by electronic media, we observed that people faced issues to get access to these facilities and this is one of the main reasons behind the death. To overcome the problem faced by an emergency patient from getting ambulance service till the acceptance of the patient by the hospital, we proposed a solution which helps patient to get the healthcare service in time, using our website, patient or his/her caretaker may contact to the nearest hospital for the service. Our website contains nearest doctors', hospital's list, phone numbers, mobile numbers, bed available, services provided by the hospital, total expenses required, etc. All events will be recorded by the system and this helps to strengthen the healthcare system and the needy one. We here also proposed a system for accident detection using IOT, Node MCU- which senses the vehicle parameters like speed, impact, and using smartphone with Blynk application software, we come to know about vehicle accident category like medium or severe. When an accident happens to the vehicle, Node MCU using sensor senses the seriousness and accordingly. Node MCU sends an alert message and GPS location of the accident on a smartphone of the nearest ambulance driver and owner. So that, using location coordinates, he/she will give the service to accident patients.

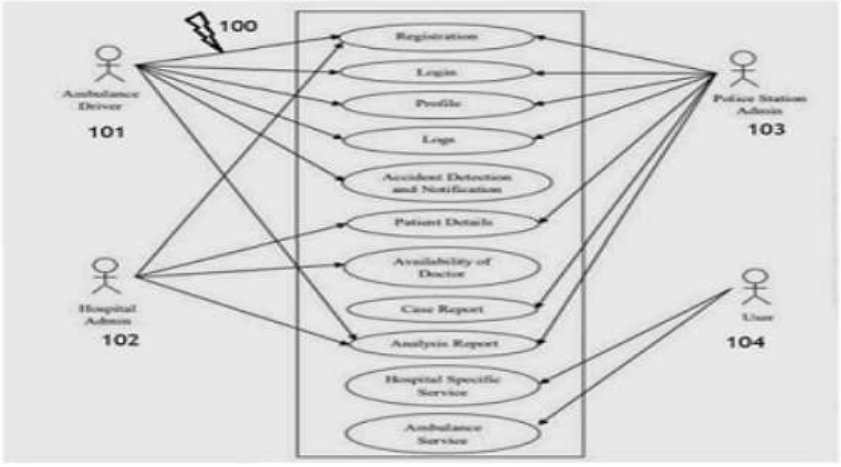


Fig.1: Use Case Diagram

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202221017051 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TO DEVELOP AN ENSEMBLE MODEL USING MACHINE LEARNING TECHNIQUES TO STUDY THE IMPACT ON MENTAL HEALTH AND WELLBEING OF GRADUATE STUDENTS DUE TO PANDEMIC.

(51) International classification	:G06Q0050200000, A61B0005160000, G06Q0050220000, G16H0050200000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Indira College of Engineering and Management
Address of Applicant :Indira College of Engineering and Management S.No. 64, 65, Gat No. 276 At Post: Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune – 410 506 ---------- ----------
2)Dr. Poorna Shankar
3)Mr. Sanjay Bankar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Poorna Shankar
Address of Applicant :Indira College of Engineering and Management S.No. 64,65, Gat No. 276 At Post : Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune ---------- ----------
2)Mr. Sanjay Bankar
Address of Applicant :Indira College of Engineering and Management S.No. 64, 65, Gat No. 276 At Post: Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune – 410 506 ---------- ----------

(57) Abstract :
ABSTRACT Our Invention To develop an ensemble model using machine learning techniques to study the impact on Mental Health and Wellbeing of graduate Students due to pandemic is a days of public health crisis, the psychological capacity of the public to deal with ongoing pandemic is of a global worry and this is not applicable to individuals with COVID19 only but also those who are in quarantine for a long time during a lockdown. The world has witnessed the massive changes in all fronts, and education industry (academia) is no exception. The COVID-19 pandemic has had a significant worldwide impact on the lives of many people especially more than a billion students during the first wave (UNESCO 2021). The American Psychological Association (APA) reports 81% of Gen Z teens have experienced more intense stress during the COVID-19 pandemic. Major technological transformation, agility and disruption have been observed in educational sectors from schools to professional colleges. As of June 2020, almost every nation in world have shut schools and educational institutes across the country, either postponing or prohibiting campus activities. The teachers, students and their families have experienced psychological distress in the form of anxiety, anger, confusion and stress like symptoms that has led to degradation of mental health. The high range of mental consequences in college students have been noticed in different studies conducted worldwide. According to Young's Mind Survey 75% of people, think that they have found the current lockdown harder to cope with than the previous ones including 44% who said it said it was much harder. Above 67% stated that the pandemic will have enduring negative effect on the mental health of students. Almost every student is suffering from anxiety and it is important to explore the mental health and wellbeing of students during this pandemic. Therefore, the proposed research will study to predict the impact of epidemic on Mental Health and Wellbeing among graduate Students using machine learning algorithms. An ensembled predictive model will be developed to find the change in the mental health and to study the factors that have contributed to degrade the mental health and wellbeing of the students.

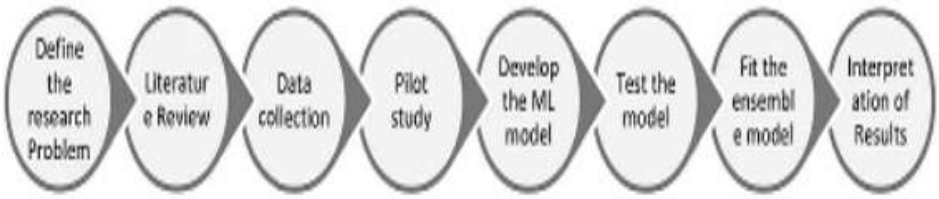


Fig.1: **Methodologies**

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202221017052 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENHANCEMENT IN MATERIAL REMOVAL RATE AND HOLE QUALITY OF TITANIUM ALUMINIDE (LIGHT WEIGHT HIGH STRENGTH TEMPERATURE RESISTANCE) MATERIAL USING HYBRID ULTRASONIC ASSISTED PULSE ELECTROCHEMICAL MACHINING PROCESS FOR INDUSTRIAL APPLICATION.

(51) International classification	:B23H0009140000, B24B0001040000, B23H0003000000, B23H0003040000, B23K0103080000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Bharati Vidyapeeth Deemed to be University College of Engineering Pune
Address of Applicant :Main Building, Pune-Satara road, Bharati Vidyapeeth Campus, Dhankawadi, Pune, Maharashtra 411043, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Dattatray Bhagawan Jadhav
Address of Applicant :Flat No 4 A Wing Sr. No. 127/1A Anant Smriti Co Op HSG Society Dattanagar Road Katraj Pune 411046 ---------- ----------
2)Prof. D. S. Bilgi
Address of Applicant :Flat No:9, Shounk Housing Society,15thLane Prabhat Road, Pune 411004 ---------- ----------
3)Prof. Pradeep V. Jadhav
Address of Applicant :Flat No 19 A wing 3rd floor Chandrai Spandan Near Narayani dham Mandir Katraj Pune 411046 ---------- ----------
4)Prof. Ashish Haribhau Pawar
Address of Applicant :Research Scholar, VIIT Pune and Assistant Professor, SoME, Dr. Vishwanath Karad MITWPU, Pune-38. Harinandan Niwas S.No-9/1 Near Sinhgad College, Ambegaon Pune-46 ---------- ----------
5)Prof. Dr. Dinesh Namdevrao Kamble
Address of Applicant :A3, 702, Dream city, Behind Telco Colony, Jambhulwadi Road, Ambegaon Budruk Pune 411046 ---------- ----------
6)Prof. Aniket Baburao Pawar
Address of Applicant :Research Scholar, BVDUCOE Pune, Professor RIT Islampur Sangli Sadaguru Teachers colony Palus 416310 ---------- ----------

(57) Abstract :
ABSTRACT Pulse electrochemical machining process is hybridized with ultrasonic machining process and a new ultrasonic assisted pulse electrochemical machining setup is developed. The ultrasonic stack assembly capable of vibrating the electrochemical machining tool at 28-kHz frequency is successfully developed. Standard 230V, AC and 50Hz frequency electrical input is converted into 28,000Hz, 300V electrical signal with the help of an ultrasonic generator. The main working elements of the ultrasonic assisted pulse electrochemical machining (USAPECM) setup are cathode tool, tool feed mechanism, machining chamber, electrolyte storage tank, pulse power supply unit, ultrasonic stack assembly and ultrasonic generator unit. A pulse power supply; in the voltage range of (6V – 30V), output current in the range of (0A - 33A), pulse on time range is available from 50µs to 2000µs in 12 steps and duty cycle from 8% to 96% in 12 steps are available. Research outcomes can be successfully implemented in the following fields: a) Defense: The Defense Research and Development Organization (DRDO) and Bharat Heavy Electrical Limited (BHEL) which are engaged in turbine manufacturing can directly employ the above technique for drilling cooling holes in turbine blades made of super alloys where, high hardness and strength of material make them extremely difficult to machine. b) Aviation industry: Hindustan Aeronautics Limited (HAL) one of the oldest and largest aerospace industries engaged in manufacturing military aircraft can directly employ the above technique for machining engine components, rocket engine parts and jet engine rings. c) Textile Industry: Spinnerets used in fiber manufacture require numerous tiny holes. Textile Industry can directly employ the above technique and produce tiny holes efficiently. d) Automobile industry: Firing chambers of internal combustion, gasoline engines. e) Medical Applications: Producing pin holes in surgery components required during hip joint replacement and valve components that are made of titanium and cobalt based super alloy.

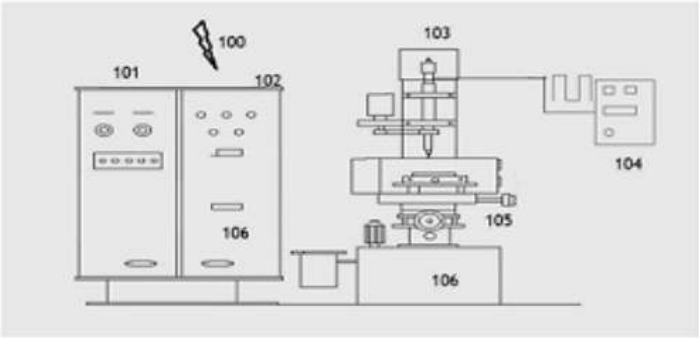


Fig.1: Enhancement in material removal rate and hole quality of titanium aluminide (light weight high strength temperature resistance) material using hybrid ultrasonic assisted pulse electrochemical machining process for industrial application Flow.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202221017053 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NOVEL DYNAMIC TIME AND FREQUENCY DOMAIN APPROACH FOR REMOVING NOISE FROM AUDIO SIGNAL

(51) International classification	:G10L0021020800, H04R0003000000, G10L0021023200, G10L0021021600, G10L0025510000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mrs. Sushama Dattatray Gavarskar
Address of Applicant :MGM's Jawaharlal Nehru Engineering college N-6 Cidco Aurangabad, Maharashtra India ---------- ----------
2)Dr. U.D. Shiurkar
3)Mr. Girish Rajeshwar Basole
4)Mr. Ajay S. Ladkat
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mrs. Sushama Dattatray Gavarskar
Address of Applicant :MGM's Jawaharlal Nehru Engineering college N-6 Cidco Aurangabad, Maharashtra India ---------- ----------
2)Dr. U.D. Shiurkar
Address of Applicant :Organiz Deogiri Institute of Engineering and Management studies, Railway station Road Aurangabad 431005,Maharashtra India ---------- ----------
3)Mr. Girish Rajeshwar Basole
Address of Applicant :GM's Jawaharlal Nehru Engineering college, N-6 Cidco Aurangabad, Maharashtra India. ---------- ----------
4)Mr. Ajay S. Ladkat
Address of Applicant :Vishwakarma Institute of Technology Pune , MH, India. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Novel dynamic time and frequency domain approach for Removing noise from audio signal is a In the speech domain, having efficient noise reduction models with better efficiency and less complexity becomes a must. When working on speech identification, augmentation, improvement, and transmission, the presence of noise in audio signals is a significant issue. As a result, the most efficient noise reduction method must be developed, one that operates in real time and removes the largest amount of noise. To overcome this challenge, we employ a dynamic method in both the time and frequency domains in our research. The size of the noise filtering window changes over time, based on the characteristics retrieved from time and frequency domain analysis. When compared to previous techniques, the Signal to Noise Ratio (SNR) obtained utilising the suggested dynamic approach is extremely high. Many researchers have experimented with audio pre-processing in various ways. After going through them, I saw that practically every researcher focused on static noise or static window size. In practice, however, this is not the case. So following is the proposed system architecture to remove noise from audio signal efficiently.

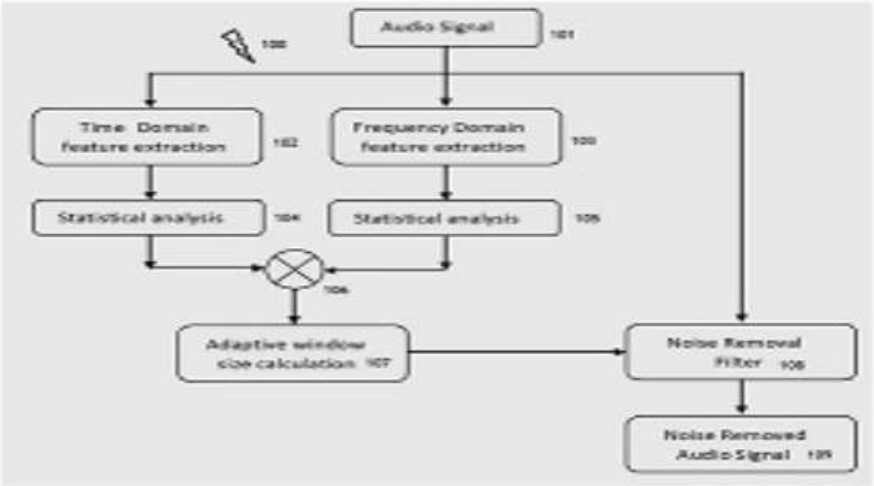


Figure 1. System architecture of dynamic time and frequency domain approach for removing noise from audio signal

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202221017054 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SIGN LANGUAGE INTER CONVERTER USING CONVOLUTIONAL NEURAL NETWORK AND LONG AND SHORT TIME MEMORY ENCODING & DECODING NETWORK.

(51) International classification	:G09B0021000000, G06N0003040000, H04M0003420000, G06K0009620000, G09B0021040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Indira College of Engineering and Management
Address of Applicant :INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT, PUNE, MAHARASHTRA 410506, INDIA. ---------- ---------- ----------
2)Prof. Manjusha Tatiya
3)Prof. Pragati Chaudhari
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Prof. Manjusha Tatiya
Address of Applicant :INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT, PUNE, MAHARASHTRA 410506, INDIA. ---------- ----------
2)Prof. Pragati Chaudhari
Address of Applicant :INDIRA COLLEGE OF ENGINEERING AND MANAGEMENT, PUNE, MAHARASHTRA 410506, INDIA. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Sign Language Inter converter using convolutional neural network and long and short time memory encoding & decoding network is a Sign Language is used by the deaf and hearing-impaired community for communication. So, to make it easier to communicate between the hearing-impaired and the hearing community a medium should be created through which they can communicate with each other without knowing to use the sign language for the hearing party and spoken language for the hearing-impaired. The medium through which they communicate should be able to translate the spoken language to sign language and vice versa is fundamental. In this way there will be an inclusivity in the society where the hearing-impaired can openly communicate with the hearing community. Sign Language Translation systems could significantly improve the deaf and hearing-impaired community, especially in day-to-day communication, exchange of information, and all the benefit that such systems can provide by translating conversations from one language to another. For the two-ways communication system we also need to research speech recognition, as Extracting feature from speech is an important part when it comes to speech to sign conversion. We also researched recent advancements in the field of machine learning and deep learning which will be used for sign to text/speech conversion. Also, we need to consider the challenges that we'll be facing in such a two-way communicating system and the fundamentals components required for the system.

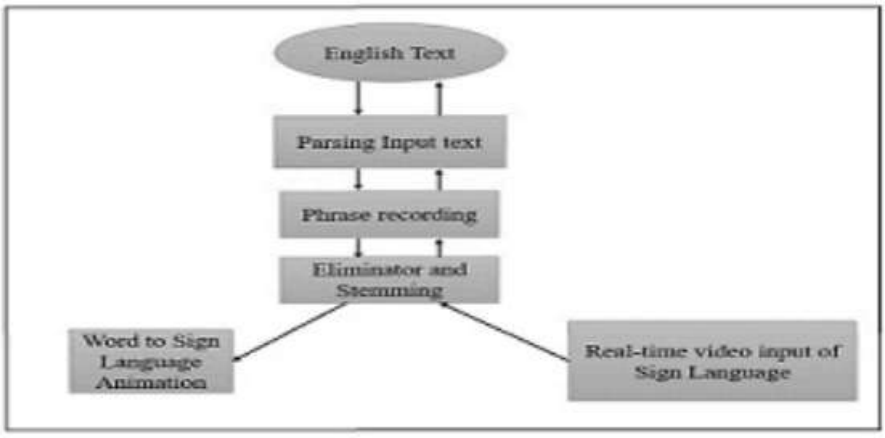


Fig.1: System architecture:

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

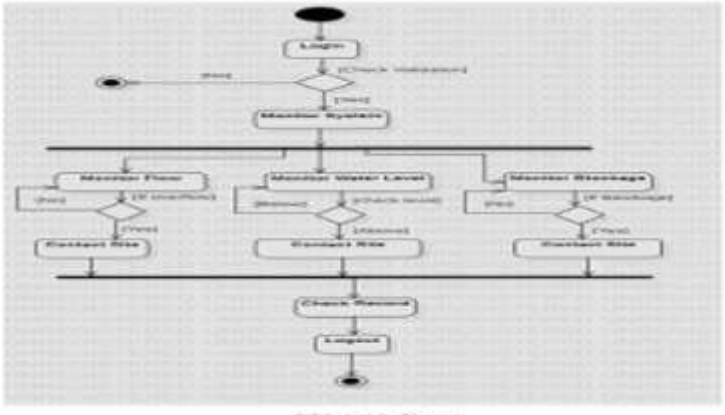
(21) Application No.202221017055 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART DRAINAGE SYSTEM USING IOT

(51) International classification	:H04L0029080000, E03F0005040000, E02D0029140000, G06Q0050100000, G08B0021120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Arun Saxena
Address of Applicant :Flat No. 103, C -Wing, Dheeraj Enclave, CTS No. 169,Village Magathane, W.E. Highway, Borivali (East), Mumbai, Maharashtra ---------- ----------
2)Ms. Linda Mary John
3)Mr. Samarth Pandit
4)Mr. Meet Sanjay Solanki
5)Mr. Dharmik Desai
6)St. John College of Engineering and Management
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Arun Saxena
Address of Applicant :Flat No. 103, C -Wing, Dheeraj Enclave, CTS No. 169,Village Magathane, W.E. Highway, Borivali (East), Mumbai, Maharashtra ---------- ----------
2)Ms. Linda Mary John
Address of Applicant :A-11/302 Shantidham , Shrushti,Mira Road(E), Thane (D)-401107 ---------- ----------
3)Mr. Samarth Pandit
Address of Applicant :B/1 Chandan Apartment, Achole Road Chandak Naka Nallasopara East. ---------- ----------
4)Mr. Meet Sanjay Solanki
Address of Applicant :B/01, Arun Apt CHSL, Narayan Mhatre Road, Dahisar (West), Mumbai - 400068 ---------- ----------
5)Mr. Dharmik Desai
Address of Applicant :B/82 Adarsh Rustomjee Regal Chs ,Old Marve Road ,Malad (w)- 400064 ---------- ----------

(57) Abstract :
ABSTRACT Our invention Smart Drainage System using IOT is a Manhole maintenance by human control is very difficult because of the environmental issues and also it is difficult to go inside each manhole for inspecting its state. This project aims at developing a Smart Drainage System using Internet of Things (IoT). In this system there are sensors placed inside of the manhole which detects and transfers appropriate information about water levels, slit deposit and other factors to the managing station (Municipal Corporation) using the Android application So that they can take precautionary action to solve the issue considering public safety. This project also aims to solve the problem of manhole lid displacement by using the tilt sensor.



No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202221017056 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PREDICTION OF SEVERE ENVIRONMENTAL IMPACTS RELATED TO CONSTRUCTION PROCESS OF RESIDENTIAL BUILDING.

(51) International classification	:G06Q0010060000, G06Q0050080000, G06Q0010100000, G06Q0010000000, G09B0009000000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Indira college of engineering and management
Address of Applicant :Indira college of engineering and management, S.No. 64, 65, Gat No. 276 At Post: Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune – 410 506 ---------- ----------
2)Ms. Sujata Deo
3)Mrs. Ashwini Joshi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ms. Sujata Deo
Address of Applicant :Indira college of engineering and management, S.No. 64, 65, Gat No. 276 At Post: Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune – 410 506 ---------- ----------
2)Mrs. Ashwini Joshi
Address of Applicant :Indira college of engineering and management, S.No. 64, 65, Gat No. 276 At Post: Parandwadi, Near Somatne phata, Tal. : Maval, Dist. Pune – 410 506 ---------- ----------

(57) Abstract :
ABSTRACT Our Invention PREDICTION OF SEVERE ENVIRONMENTAL IMPACTS RELATED TO CONSTRUCTION PROCESS OF RESIDENTIAL BUILDING is a construction is considered as one of the main source of environmental pollution. The demand for construction is increasing day by day in the world. The main aim of this study is to evaluate the most common environmental impacts of residential building during construction. The study will help to identify the most common environmental impacts according to their impact level, frequency and consequences of occurrence. This study will help the organizations and project manager or construction manager to increase the knowledge of people which are involved in construction through training and awareness program. The aim of this research is to study implementation of EMS (Energy Management System) in construction companies and to improve the organizational environmental performance. Different methodologies are able to compare the overall impact of various construction projects and rank the significance of various environmental impacts on each project. The environmental impact at particular site is identified primarily at construction stage and their significant impacts are highlighted. Thus, it is possible to implement measures for mitigating adverse impacts, which can then be implemented during construction activities. This research will serve as an assessment tool for the construction project to measure the inputs of their construction activities.

Fig.1: Methodologies

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

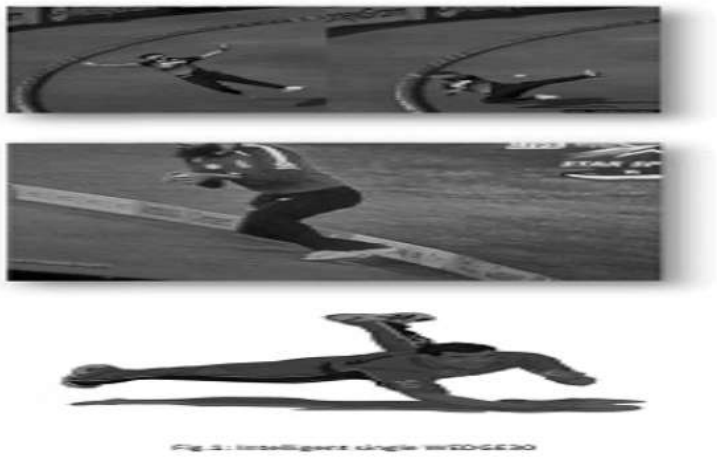
(21) Application No.202221017057 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTELLIGENT SINGLE WEDGE30

(51) International classification :A63B0071060000, A63B0102200000, A63F0009240000, A63B0069000000, A63F0007060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sadhana Vishwanath Sabne
Address of Applicant :Madhav Niwas, Sai Road, Holkar Nagar, Near Mallikarjun school, Arvi, Latur, Maharashtra - 413512. ---------- ----------
2)Pramod Vishwanath Sabne
3)Kailash Vishwanath Sabne
4)Santosh Maruti Kalyankar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Sadhana Vishwanath Sabne
Address of Applicant :Madhav Niwas, Sai Road, Holkar Nagar, Near Mallikarjun school, Arvi, Latur, Maharashtra -413512. ---------- ----------
2)Pramod Vishwanath Sabne
Address of Applicant :Madhav Niwas, Sai Road, Holkar Nagar, Near Mallikarjun school, Arvi, Latur, Maharashtra -413512. ---------- ----------
3)Kailash Vishwanath Sabne
Address of Applicant :Room no 4, Plot no 26, Steelage CHS, Sector 3, New Panvel, Raigad, Maharashtra 410206. ---------- ----------
4)Santosh Maruti Kalyankar
Address of Applicant :Room no 4, Plot no 26, Steelage CHS, Sector 3, New Panvel, Raigad, Maharashtra 410206 ---------- ----------

(57) Abstract :
ABSTRACT In cricket, the boundary is the perimeter of a playing field. It is also the term given to a scoring shot where the ball is hit to, or beyond, that perimeter, which generally earns four or six runs for the batting team. In past few years, related to fielding in cricket, the decision is sometimes unfair due to technology and Umpiring error. Sometimes the minute angles and drops are not capture by camera. Due to this benefit of doubt goes to particularly one team and we all know one run or one wicket is very important in a cricket game. So, we came up with a solution of wedge30 new advance sensing wedges which will detect a fielder or a ball when it comes in contact with the Wedge30 and will light up which will ease the umpire to make a decision and will also save time.



No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202221018014 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AI- BASED PRODUCT RANKING EVALUATION PROCESS SYSTEM

(51) International classification :G06Q0050180000, G06Q0030060000, A61K0039000000, E21B0004180000, A41D0027080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Rutuja Vivek Tikait
Address of Applicant :Assistant Professor, Pune University Flat B505, River Residency, Dehu alandi road, Chikhali, Pune – 411062 ---------- ----------
2)Dr. Jagdish W. Bakal
3)Dr. Lata Menon
4)Dr. Biplab Kumar Sarkar
5)Dr. G.R. Patil
6)Mr. Raju Narwade
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Rutuja Vivek Tikait
Address of Applicant :Assistant Professor, Pune University Flat B505, River Residency, Dehu alandi road, Chikhali, Pune – 411062 ---------- ----------
2)Dr. Jagdish W. Bakal
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
3)Dr. Lata Menon
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ARTS, SCIENCE AND COMMERCE RASAYANI TALUKA KHALAPUR DISTRICT RAIGAD MAHARASHTRA 410207, INDIA. ---------- ----------
4)Dr. Biplab Kumar Sarkar
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
5)Dr. G.R. Patil
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
6)Mr. Raju Narwade
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention AI- Based Product Ranking Evaluation Process System is a An item might have many angles. A portion of the item angles are a higher priority than the others and have solid effect on the inevitable customer's decision making as well as association's item advancement systems. Recognizable proof of significant item perspectives become vital as the two buyers and firms are benefited by this. Buyers can without much of a stretch settle on buying choice by focusing on the significant viewpoints also as firms can zero in on working on the nature of these perspectives and in this manner upgrade item notoriety productively. This paper gives the depiction of different methods for item angle ID and grouping

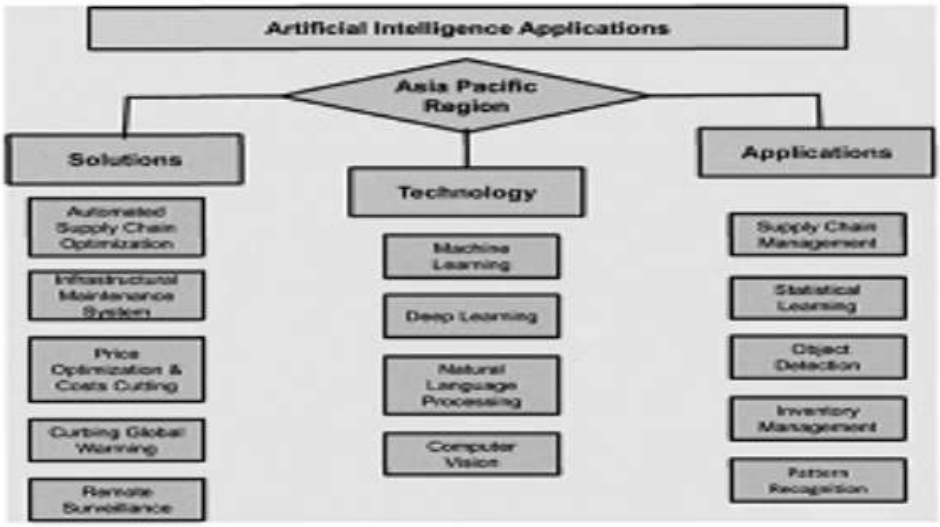


Fig 1 : AI- Based Product Ranking Evaluation Process System, Flow Chart.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202221018015 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GENETIC LEVEL ADVANCED THERAPY FOR NEONATAL GENE TREATMENT.

(51) International classification :A61K0048000000, G09B0023280000, G02B0005124000, A63F0001040000, A61K0031122000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. B.K Sarkar
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
2)Manaswi Shamsundara
3)Dr. Jagdish W. Bakal
4)Dr. Vandana Singh
5)Mr. Pawan Kumar Singh
6)Dr. Reena Singh
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. B.K Sarkar
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
2)Manaswi Shamsundara
Address of Applicant :Dr. B.R Ambedkar Medical, College, 19, Venkateshpuram, Kadugondanahalli, Bengaluru, Karnataka 560045, India. ---------- ----------
3)Dr. Jagdish W. Bakal
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
4)Dr. Vandana Singh
Address of Applicant :SGPGI Hospital, Raibareli Rd, Haibat Mau Mawaiya, Pushpender Nagar, Lucknow, Uttar Pradesh 226014, India ---------- ----------
5)Mr. Pawan Kumar Singh
Address of Applicant :MAHATMA EDUCATION SOCIETY'S TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
6)Dr. Reena Singh
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Genetic level advanced therapy for neonatal gene Treatment is a ongoing examinations in creature models outline the adequacy of early quality exchange. Nonetheless, the components basic these triumphs, and those obstructing surprisingly better outcomes, are still less surely known than in the grown-up. The best age for mediation will be directed by many elements, including the nature and seriousness of the sickness, the simplicity of its analysis, the security and adequacy of the quality treatment, the common sense of the intercession and, eventually the moral, cultural and monetary ramifications of such a methodology. The momentum ways to deal with quality treatment of monogenetic illnesses into mature life forms are gone up against with a few issues including the accompanying: (1) the hidden hereditary deformity might have previously caused irreversible obsessive changes; (2) the degree of adequate protein articulation to enhance or forestall the illness requires restrictively a lot of quality conveyance vector; (3) grown-up tissues might be inadequately contaminated by traditional vector frameworks subject to cell expansion for ideal disease, for instance, oncoretrovirus vectors; (4) invulnerable reactions, either prior or creating following vector conveyance, may quickly kill transgenic protein articulation and forestall future successful intercession. Early quality exchange, in the neonatal or even fetal period, may defeat some or these obstructions. The mammalian baby partakes in a particularly safeguarded climate in the belly, washed in a biochemically and truly steady liquid without heap extra-uterine microorganisms. Solid physical and synthetic boundaries to disease may, maybe, block the excited cell division. The actual help and the biochemical help given by the fetal-maternal placental point of interaction may, in this manner, limit the beginning of hereditary sicknesses manifest from the get-go throughout everyday life.

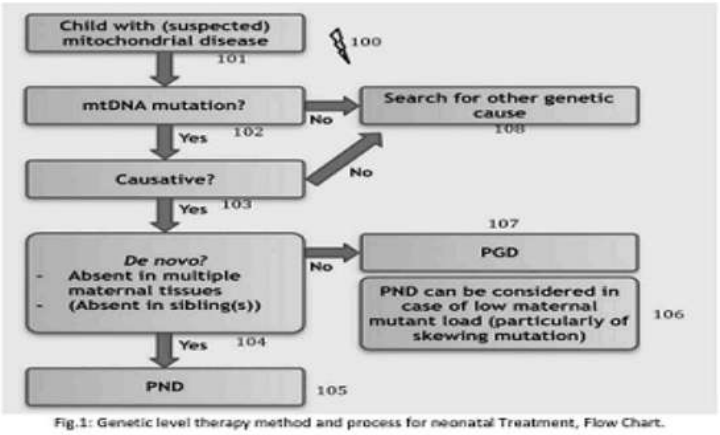


Fig.1: Genetic level therapy method and process for neonatal Treatment, Flow Chart.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202221018016 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POINT REGRESSION ANALYSIS-BASED BIG DATA PROCESSING USING MACHINE LEARNING AND DEEP LEARNING

(51) International classification :G06Q0010060000, H04L0029080000, G06F0021410000, G06N0005020000, G06Q0010040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Basavaraj Hadapad
Address of Applicant :Data Scientist, R&D Automotive Address: Flat no 1003, N2 block, River Residency Apartment Chikhali Pune, MH, India. ---------- ----------
2)Dr. Jagdish W. Bakal
3)Dr. Biplab Kumar Sarkar
4)Dr. Reena Singh
5)Ms. Rohini Bhosale
6)Ms. Rajashree Gadhave
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Basavaraj Hadapad
Address of Applicant :Data Scientist, R&D Automotive Address: Flat no 1003, N2 block, River Residency Apartment Chikhali Pune, MH, India. ---------- ----------
2)Dr. Jagdish W. Bakal
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
3)Dr. Biplab Kumar Sarkar
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
4)Dr. Reena Singh
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
5)Ms. Rohini Bhosale
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
6)Ms. Rajashree Gadhave
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Point Regression Analysis-Based Big Data Processing Using Machine Learning and Deep Learning is a In the current age of the Fourth Industrial Revolution (4IR or Industry 4.0), the computerized world has an abundance of information, like Internet of Things (IoT) information, network protection information, versatile information, business information, web-based entertainment information, wellbeing information, and so on To brilliantly investigate these information and foster the relating shrewd and mechanized applications, the information on man-made consciousness (AI), especially, AI (ML) is the key. Different sorts of AI calculations, for example, directed, solo, semi-managed, and support learning exist nearby. Moreover, the profound realizing, which is essential for a more extensive group of AI strategies, can astutely examine the information for an enormous scope. In this paper, we present an extensive view on these AI calculations that can be applied to upgrade the knowledge and the abilities of an application. Consequently, this study's key commitment is making sense of the standards of various AI procedures and their pertinence in different true application spaces, for example, network safety frameworks, shrewd urban areas, medical care, web based business, farming, and some more. We additionally feature the difficulties and potential examination headings in light of our review. In general, this paper plans to fill in as a kind of perspective point for both scholarly community and industry experts as well with respect to chiefs in different certifiable circumstances and application regions, especially according to the specialized perspective.

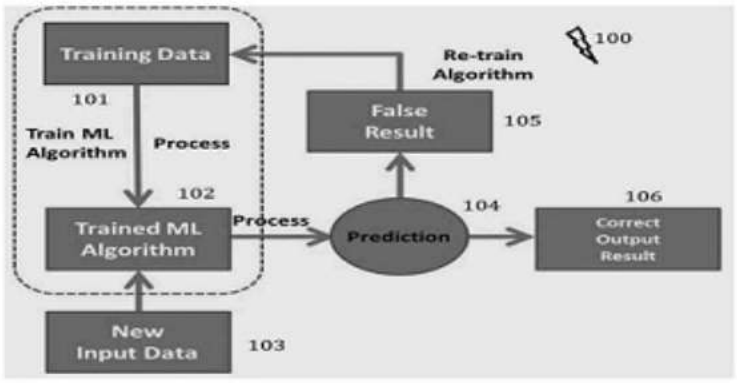


Fig.1: Point Regression Analysis-Based Big Data Processing Using Machine Learning and Deep Learning, Flow Chart.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202221018017 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VIBRATION OF A SINGLE WALLED CARBON NANO-TUBE FOR DELIVERING OF NANOPARTICLES.

(51) International classification :B82Y0030000000, G01N0021650000, B82Y0040000000, B82Y0015000000, A61K0031704000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Manojkumar N Udgire
Address of Applicant :Assistant Professor, Alamuri Ratnanamala Institute of Engineering and Technology Shahpur, Thane Mumbai, Maharashtra, India. ---------- ----------
2)Dr. B.K.Sarkar
3)Gaurav Patil
4)Mr. Pawan Kumar Singh
5)Mr. Hemant Patil
6)Ms. Ashwini Kadam
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Manojkumar N Udgire
Address of Applicant :Assistant Professor, Alamuri Ratnanamala Institute of Engineering and Technology Shahpur, Thane Mumbai, Maharashtra, India. ---------- ----------
2)Dr. B.K.Sarkar
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
3)Gaurav Patil
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
4)Mr. Pawan Kumar Singh
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOSTAL, NEW PANVAL, MH, INDIA ---------- ----------
5)Mr. Hemant Patil
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA. ---------- ----------
6)Ms. Ashwini Kadam
Address of Applicant :MAHATMA EDUCATION SOCIETY'S PILLAI HOC COLLEGE OF ENGINEERING &TECHNOLOGY RASAYANI TALUKA PANVEL, DIST, NAVI MUMBAI, MAHARASHTRA 410207, INDIA ---------- ----------

(57) Abstract :
ABSTRACT Our Invention Vibration of a single walled carbon Nano-tube for delivering of Nanoparticles is a Nanoparticle-based atomic imaging has arisen as an interdisciplinary field which includes material science, science, designing, science, and medication. Single-walled carbon nanotubes (SWCNTs) have exceptional properties which make them reasonable for applications in an assortment of imaging modalities, like attractive reverberation, close infrared fluorescence, Raman spectroscopy, photoacoustic tomography, and radionuclide-based imaging. In this survey, we will sum up the present status of-the-specialty of SWCNTs in sub-atomic imaging applications. Multifunctionality is the vital benefit of nanoparticles over customary methodologies. Focusing on ligands, imaging marks, restorative medications, and numerous different specialists can be in every way coordinated into the nanoparticle to consider designated atomic imaging and sub-atomic treatment by including numerous natural and biophysical obstructions. A multifunctional, SWCNT-based Nano stage holds extraordinary potential for clinical applications later on.

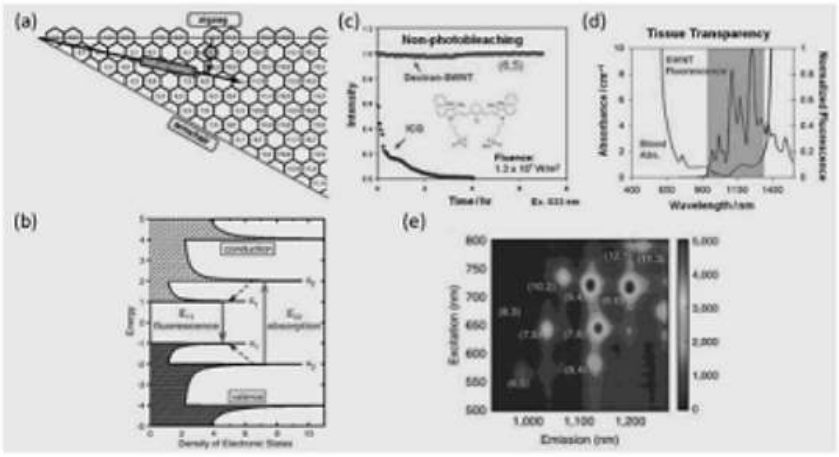


Fig.1: Vibration of a single walled carbon Nanotubes for delivery of Nanoparticles flow chart.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202221018056 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR CONVERSION LEAF VENATIONS TO DECORATIVE AND ORNAMENTAL PRODUCTS

(51) International classification :C11D0003390000, A61K0008200000, B27K0009000000, C01B0015100000, C02F0103020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Saima Rashid Mir
Address of Applicant :Department of Botany. Prof. Ramkrishna More Arts, Commerce & Science College, Akurdi, Pune 411044, Maharashtra, India ---------- ----------
2)Dr. Manohar Ganpat Chaskar
3)Dr. Hiralal Bhaskar Sonawane
4)Dr. Vilas Arjun Patil
5)Dr. Bajirao Maruti Shinde
6)Dr. Murari Mohan Jana
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Saima Rashid Mir
Address of Applicant :Department of Botany. Prof. Ramkrishna More Arts, Commerce & Science College, Akurdi, Pune 411044, Maharashtra, India ---------- ----------
2)Dr. Manohar Ganpat Chaskar
Address of Applicant :Department of Science & Technology. Savitribai Phule Pune University, Pune 411008, Maharashtra, India ---------- ----------
3)Dr. Hiralal Bhaskar Sonawane
Address of Applicant :Department of Botany. Prof. Ramkrishna More Arts, Commerce & Science College, Akurdi, Pune 411044, Maharashtra, India ---------- ----------
4)Dr. Vilas Arjun Patil
Address of Applicant :Department of Botany. Dr. B.N. Purandare Arts, Smt. S.A. Mithaiwala Science College, Lonavla, Pune 410403, Maharashtra, India ---------- ----------
5)Dr. Bajirao Maruti Shinde
Address of Applicant :Department of Botany. Annasaheb Waghire College, Otur, Pune 412409, Maharashtra, India ---------- ----------
6)Dr. Murari Mohan Jana
Address of Applicant :Omkar Cooperative Housing Society, Pashan, Pune 411008, Maharashtra, India ---------- ----------

(57) Abstract :
Disclosed is a method for converting the leaf venations to long lasting decorative and ornamental products. The method comprises clearing venation of leaves using a leaf venation clearing formulation, treating the cleared leaf venations with 1-10 % formulation Sodium perborate, and Sodium percarbonate, softening the treated leaf venations with propylene glycol solution at 1:1-1:4 ratio with water and keeping them for 1-4 hrs and coloring the softened leaf venations in a dye solution of acrylic paints with water at a concentration 1-5% and soaking in the dye solution for 1-20 min.

No. of Pages : 11 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202221018494 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN AIR PURIFIER DEVICE

(51) International classification :B01D0046000000, F24F0003160000, C02F0001520000, H01M0004360000, B60H0003060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. NEHA UMESH MISHRA
Address of Applicant :EMP6/304, Evershine Millennium Paradise, Thakur Village, Kandivali East, Mumbai, Maharashtra, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. NEHA UMESH MISHRA
Address of Applicant :EMP6/304, Evershine Millennium Paradise, Thakur Village, Kandivali East, Mumbai, Maharashtra, India ---------- ----------
2)Mr. Adarsh Kumar
Address of Applicant :504, Sapphire court, Azad Nagar, Andheri West, Mumbai, Maharastra India, 400053 ---------- ----------
3)Dr. Pritesh Chandrashekhar Sharma
Address of Applicant :EMP6/304, Evershine Millennium Paradise, Thakur Village, Kandivali East, Mumbai, Maharashtra, India ---------- ----------
4)Ms. Pawni Raghuvanshi
Address of Applicant :504, Sapphire court, Azad Nagar, Andheri West, Mumbai, Maharastra, India, 400053 ---------- ----------

(57) Abstract :
ABSTRACT TITLE: AN AIR PURIFIER DEVICE Air Quality Index (AQI) is a standard value which generally measures the amount of acidic oxide such as (CO)X (NO)X, (SO)X and particulate matter which are unhealthy and a big concern in recent times. There was a need of a system or device which will reduce the air pollutants and improve the air quality index of surrounding air. Current invention provides an air purifier device (100) comprising a lower chamber (10) with perforated surface; an air filtration cartridge (20) having a hollow cavity surrounded by a four Corchorus olitorius layers, three of them are coated with lithium peroxide, activated carbon and ammonium alum respectively and placed inside and surrounding the inner surface of said lower chamber (10); an upper chamber (30) with perforated surface; and a layer of Corchorus olitorius placed inside and surrounding the inner surface of said upper chamber (30). Refer FIGURE 3:

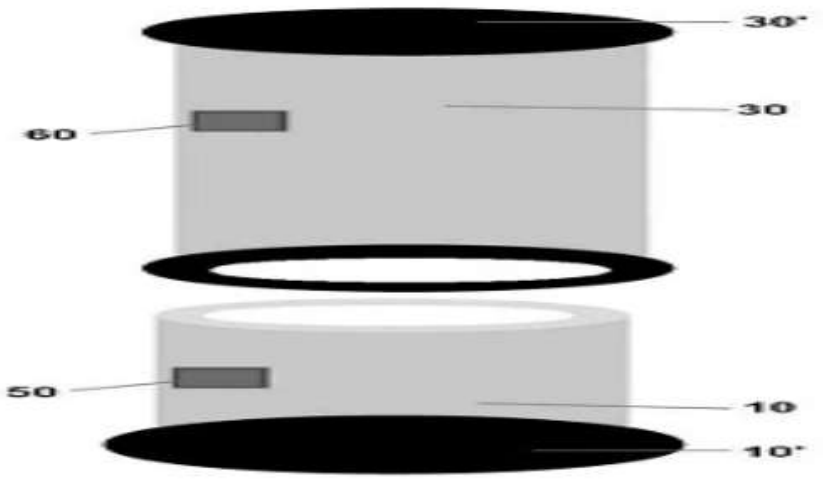


FIGURE 1A

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202221018616 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FOLDABLE SMART HUMAN CAGE

(51) International classification :A01K0001030000, H04L0029080000, A01M0029100000, A01K0031000000, H02J0007350000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr . Arvind B.Bodhe
Address of Applicant :Plot no 08, Smirti Nagar, Umred Road, Dighori, Nagpur – 440034, Maharashtra, India ---------- ----------
2)DR.PRAGATI D. DETHE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr . Arvind B.Bodhe
Address of Applicant :Plot no 08, Smirti Nagar, Umred Road, Dighori, Nagpur – 440034, Maharashtra, India ---------- ----------
2)DR.PRAGATI D. DETHE
Address of Applicant :Plot no 08, Smirti Nagar, Umred Road, Dighori, Nagpur – 440034, Maharashtra, India ---------- ----------

(57) Abstract :
FOLDABLE SMART HUMAN CAGE The present invention relates to the foldable smart cage that can be used by human beings for protection against wild animals. Foldable smart human cage comprises a case or the housing 10, roof 20, bottom 30, rings 40, mesh 50. The cage is further equipped with IOT facility for location tracking, batteries, and solar panel. Reference Fig 1.

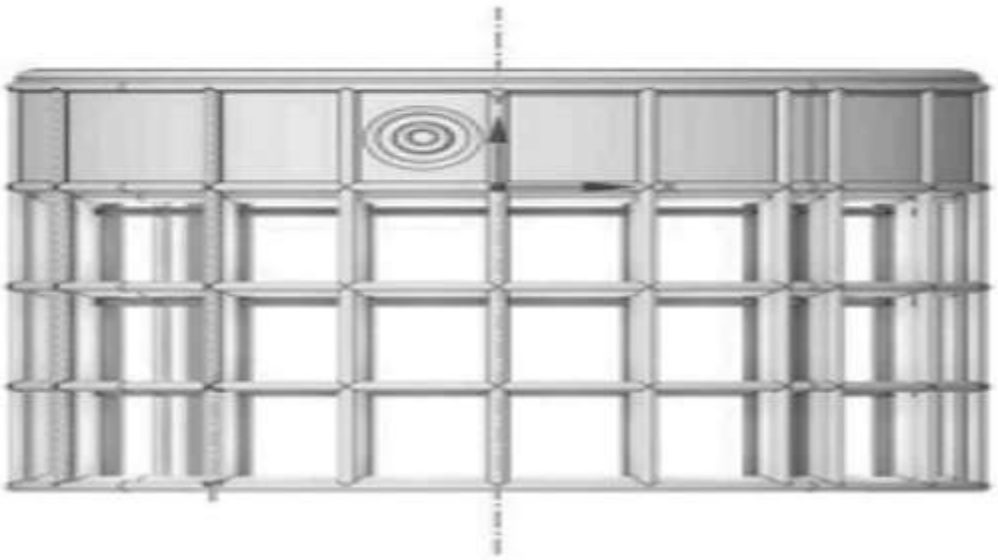


Figure 1: Folded (Compact) Smart Human Cage

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202221018787 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NI-B FILM AND METHOD FOR PREPARATION OF THE SAME

(51) International classification :C25B0011040000, C23C0016455000, C25B0001040000, B01J0037160000, B82Y0040000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)JYOTIPRAKASH BABURAO YADAV
Address of Applicant :University Science Instrumentation Centre (USIC), Shivaji University, Kolhapur. 416004, Maharashtra. India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Miss. Jamadar Aasiya Sadiq
Address of Applicant :University Science Instrumentation Centre (USIC), Shivaji University, Kolhapur. 416004, Maharashtra. India ---------- ----------
2)Mr. Sutar Rohit Bapusaheb
Address of Applicant :University Science Instrumentation Centre (USIC), Shivaji University, Kolhapur. 416004, Maharashtra. India ---------- ----------
3)JYOTIPRAKASH BABURAO YADAV
Address of Applicant :University Science Instrumentation Centre (USIC), Shivaji University, Kolhapur. 416004, Maharashtra. India. ---------- ----------

(57) Abstract :
The present invention relates to nickel boride (Ni-B) thin film and the method of preparation of the same. More specifically a method of preparation of amorphous Ni-B film using successive ionic layer adsorption and reaction (SILAR), including a preparation of Ni precursor solution, reducing agent solution and stabilizer solution in double distilled water for deposition of film (Step 1); systematically dipping substrate in each solution one by one for defined time and repeat the cycle (step 2). According to the present invention the thickness of the film is easily regulated or controlled by varying the number of cycles and Ni-B film may be prepared on a substrate, which has a wide area. The same amorphous Ni-B film is successfully applied as a bi-functional catalyst for both hydrogen evolution reaction and oxygen evolution reaction through electrochemical water splitting, and the reaction activity can be comparable with present high cost ideal catalyst such as noble metals like platinum and ruthenium/iridium oxides etc. The amorphous Ni-B film along with its low cost and simple preparation method has advantages of high catalytic efficiency, stability and durability and has become one of the most ideal catalyst for substituting the present high cost noble metal based catalysts.

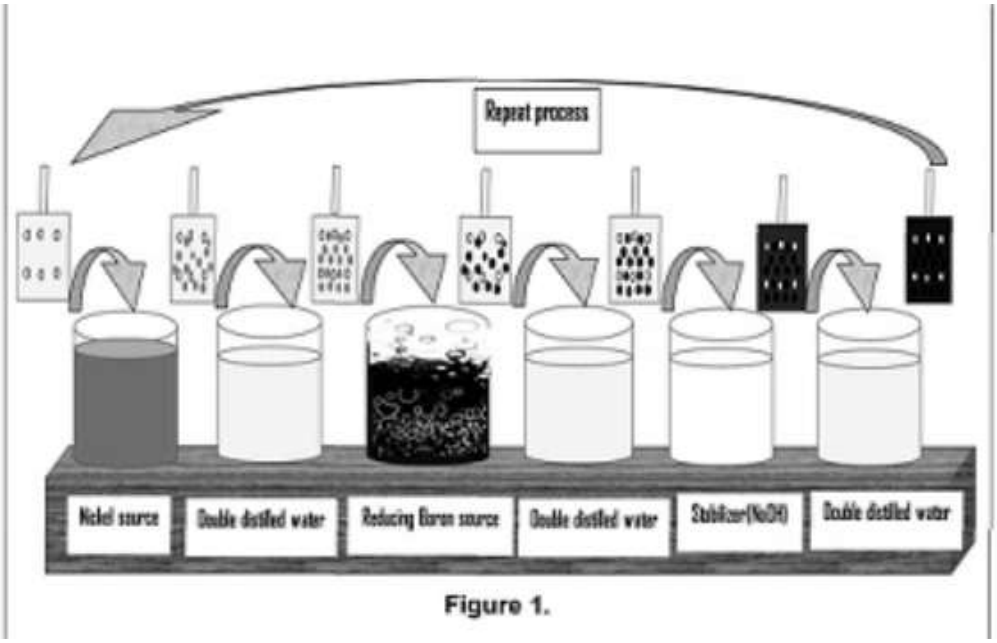


Figure 1.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202221018842 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVICE AND A METHOD FOR MEASURING MOISTURE AND BULK ELECTRICAL CONDUCTIVITY OF SOIL

(51) International classification :G01N0033240000, G01R0027020000, G01N0027040000, G01N0027070000, G01R0027220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Indian Institute of Technology Bombay
Address of Applicant :Powai, Mumbai-400076, Maharashtra, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vamsee Krishna Bodasingi
Address of Applicant :Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology Bombay, Powai, Mumbai-400076, Maharashtra, India ---------- ----------
2)Bakul Rao
Address of Applicant :Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology Bombay, Powai, Mumbai-400076, Maharashtra, India ---------- ----------
3)Harish K. Pillai
Address of Applicant :Department of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai-400076, Maharashtra, India ---------- ----------

(57) Abstract :
ABSTRACT DEVICE AND A METHOD FOR MEASURING MOISTURE AND BULK ELECTRICAL CONDUCTIVITY OF SOIL Embodiments herein disclose a device (300) for measuring soil moisture and bulk electrical conductivity. The device (300) includes a probe (100) connected with a soil moisture and electrical conductivity measuring circuit (200). The probe (100) comprises three rods (102-106), where a first rod (102) from the three rods (102-106) is connected to an oscillator (112) included in the soil moisture and electrical conductivity measuring circuit (200). A second rod (104) from the three rods (102-106) is connected to a ground plane and a third rod (106) from the three rods (102-106) is connected to the reference resistor (124) included in the soil moisture and electrical conductivity measuring circuit (200). The first rod (102) and the second rod (104) measure soil moisture, and the second rod (104) and the third rod (106) measure electrical conductivity. FIG. 3

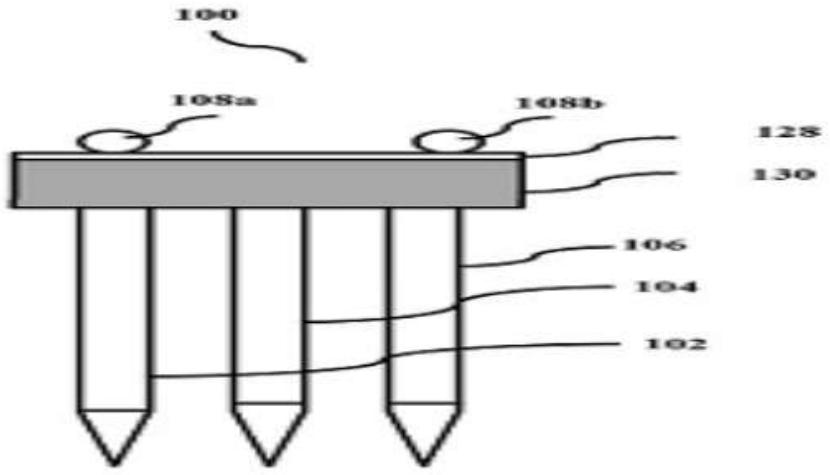


FIG. 1

No. of Pages : 29 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUTOMATIC SYSTEM TO REDUCE WATER LOSSES IN SOLAR WATER HEATING SYSTEM

(51) International classification :F24S0060300000, H01M0008042230, F24S0050000000, F28D0020000000, H02J0007350000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Sakshi Pramod Kanjalkar
Address of Applicant :Flat No 201 Arvind Apartment, Swaroop Colony,Behind Santosh Hall, Anandnagar, Sinhgad Road Pune 411051 Maharashtra India ---------- ----------
2)Sheetal Ashok Yadav
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Sheetal Ashok Yadav
Address of Applicant :Flat No. L904, Trillium, Magarpatta City, Hadapsar Pune 411028 Maharashtra India ---------- ----------
2)Sakshi Pramod Kanjalkar
Address of Applicant :Flat No 201 Arvind Apartment, Swaroop Colony, Behind Santosh Hall, Anandnagar, Sinhgad Road Pune 411051 Maharashtra India ---------- ----------
3)Pramod Madhavrao Kanjalkar
Address of Applicant :Flat No 201, Arvind Apartment, Swaroop Colony, Anandnagar, Sinhgad Road Pune 411051 Maharashtra India ---------- ----------
4)Shruti Shailesh Rane
Address of Applicant :B-801, DSK Garden Enclave, Near Welcome Hall, NIBM Road, Kondhwa Khurd Pune 411048 Maharashtra India ---------- ----------
5)Aditi Sanjay Rawat
Address of Applicant :Plot no. 88/P, Aaditva Apartment, flat no. A-105, sector no. 7, near Yash Garden, Bhosari, Pune 411026 Maharashtra India ---------- ----------
6)Varad Uday Dange
Address of Applicant :A-8, Tulshinagar Housing Society, Swami Vivekanand Road, Bibwewadi Pune 411037 Maharashtra India ---------- ----------
7)Prajyot Pramod Patil
Address of Applicant :H-704, Phase 2, Ruturang Housing Society, Aranyeshwar Road, Sahakarnagar, Parvati, Pune 411009 Maharashtra India ---------- ----------

(57) Abstract :
The automatic system to reduce water losses in solar water heating system The present invention provides an automatic system to reduce water losses in solar water heating system characterized by compartmentalized tank and control system which comprises an upper cold water tank (150) for storage connected to a compartmentalized solar water tank (101) with plurality of the compartments 101(a), 101(b) 101(c)…., a solar panel connected to the solar water tank (101), an upper temperature system (50) and lower temperature system (60) engaged with the Data Acquisition and System Controller (10), a data acquisition and controlling system (10), solenoid valves (32) and (34) controlled by the Data Acquisition and Controlling System Controller (10), a pump (160) and plurality of users (201 to 203….) and a bottom tank (152).

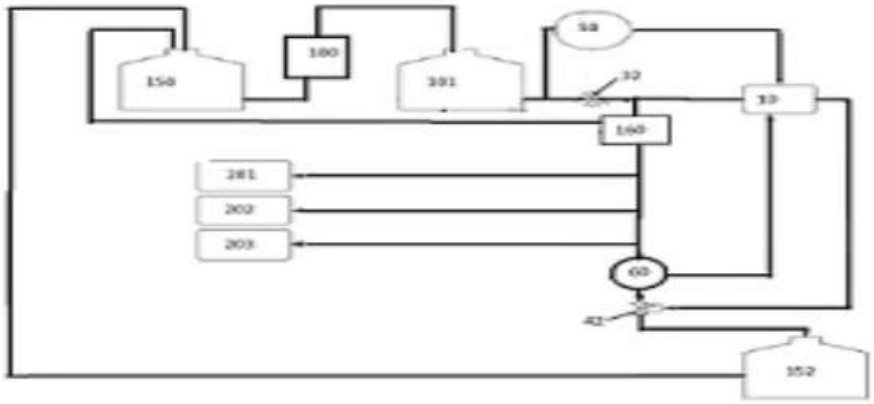


FIG.1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019493 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND RECOVERABILITY OF PROPYLENE CARBONATE FOR GREEN PROCESS

(51) International classification :H01G0011600000, C09D0011322000, G03F0007038000, C09D0007200000, C09D0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)L. D. COLLEGE OF ENGINEERING
Address of Applicant :Chemical Department, L.D College of Engineering, Navrangpura, Ahmedabad ---------- ----------
2)PARTH SHAH
3)Dr. SACHIN PARIKH
4)Dr. SATISH SHAH
5)BHOOMI MEHTA
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)PARTH SHAH
Address of Applicant :Sir Bhavsinhji Polytechnic Institute, Vidhyanagar, Bhavnagar, Gujarat, India ---------- ----------
2)Dr. SACHIN PARIKH
Address of Applicant :6TH Floor, Karmayogi Bhavan, Gandhinagar ---------- ----------
3)Dr. SATISH SHAH
Address of Applicant :Chemical Department, L.D College of Engineering, Navrangpura, Ahmedabad ---------- ----------
4)BHOOMI MEHTA
Address of Applicant :Chemical Department, L.D College of Engineering, Navrangpura, Ahmedabad ---------- ----------

(57) Abstract :
Method and recoverability of Propylene carbonate for green process In the present invention, the use of propylene carbonate as solvent in the industrial extraction processes. The organic liquid found to be the potential solvent for the number of organic chemicals that are extracted using the hazardous solvent. The greener solvent of propylene carbonate found it wide application as it has high boiling point. The recoverability of propylene carbonate from the mixture is also plays an important role for the solvent application of propylene carbonate. The present invention indicates the behaviour of the mixture involving the propylene carbonate as a component. It also involved the accurate measurement of the vapor composition and liquid composition. The liquid mixture separation data of vapor liquid mixture were generated and behaviour of liquid mixture was observed with the determination of the activity coefficient.

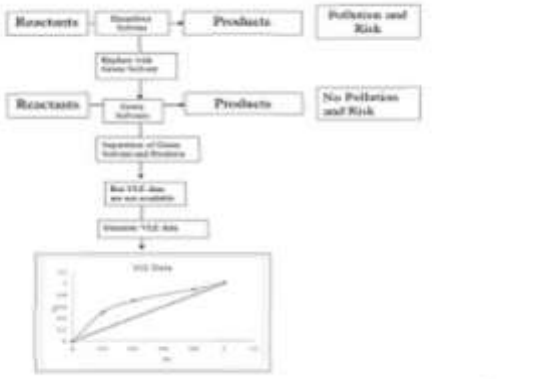


Figure (1) shows Vapor Liquid Equilibrium for Propylene Carbonate System

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019508 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A RADIO-FREQUENCY MICROELECTROMECHANICAL SYSTEM (RF MEMS) SWITCH

(51) International classification :H01H0059000000, A61M0005145000, H01G0005180000, H01H0001000000, H01H0001200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)PANDE, Rajesh
Address of Applicant :Shri Ramdeobaba College of Engineering and Management, RamdeoTekdi, Katol Road, GittiKhadan, Nagpur 440013, India. ---------- ----------
2)NAFDE, Yogita
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)PANDE, Rajesh
Address of Applicant :Shri Ramdeobaba College of Engineering and Management, RamdeoTekdi, Katol Road, GittiKhadan, Nagpur 440013, India. ---------- ----------
2)NAFDE, Yogita
Address of Applicant :Royal Vista Building, First Floor, in front of Dhantoli Garden, Main Gate, Dhantoli, Nagpur, Maharashtra – 440012. ---------- ----------

(57) Abstract :
Abstract Title: A radio-frequency microelectromechanical system (rf mems) switch The present invention is to provide an RF MEMS switch (100). The RF MEMS switch includes a base layer (110), a first electrode (120), a second electrode (130) and a spring actuation mechanism (140). The second electrode (130) is connected to the spring actuation mechanism (140). The spring actuation mechanism (140) facilitates a longitudinal force along a length direction of the second electrode (130). The first electrode (120) is having a conducting surface (120a) and a non-conducting surface (120b). When activating the circuit, the spring actuation mechanism (140) enables the second electrode (130) to move in the length direction and contacts with the conducting surface (120a) of the first electrode (120) to configure an ON position. When deactivating the circuit, the spring actuation mechanism (140) retracts the second electrode (130) such that the second electrode (130) contacts with the non-conducting surface (120b) of the first electrode (120) configuring an OFF position. Figure 1

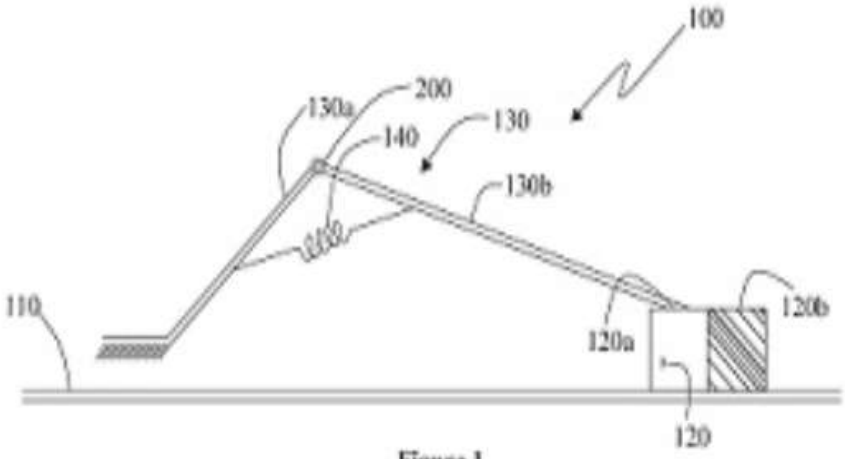


Figure 1

No. of Pages : 22 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019551 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN AND DEVELOPMENT OF NANO CARBIDE FREE BAINITE HIGH STRENGTH STEEL

(51) International classification :C21D0001200000, C21D0008020000, C21D0008000000, C04B0028040000, C22C0038020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)IES College of Technology Bhopal
Address of Applicant :IES College of Technology, Main Road, Kali Kheda, Ratibad, Madhya Pradesh -462044 ---------- ----------
2)Dr. Rajan Kumar
3)Dr. Pooja Bijlani
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Rajan kumar
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
2)Dr. Ravi Kumar Dwivedi
Address of Applicant :Professor, Department of Mechanical Engineering, MANIT Bhopal, Madhya Pradesh ---------- ----------
3)Dr. Arun Rathore
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
4)Dr. Anupam Kumar
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
5)Dr. Pallavee Bhatnagar
Address of Applicant :Professor, Department of Electrical and Electronics Engineering, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
6)Mr. Siddharth Sharma
Address of Applicant :Graduate Software Engineer, Department of Mechanical Engineering, Renishaw Metrology System, Bhopal, Madhya Pradesh ---------- ----------
7)Mr. Bhanu Pratap Singh Sikarwar
Address of Applicant :Assistant Professor, Department of Civil Engineering, IES University, Bhopal, Madhya Pradesh - 462044 ---------- ----------
8)Bhupchand Kumhar
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, IES University, Bhopal, Madhya Pradesh - 462044 ---------- ----------
9)Dr. Pooja Bijlani
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, IES University, Bhopal, Madhya Pradesh - 462044 ---------- ----------

(57) Abstract :
The remarkable combinations of high strength, better ductility, high toughness, less corrosive are the major causes behind the selection of a material in heavy industries applications. It has been observed that when extra emphasis is given on one of the qualities like strength, factors like ductility gets compromised up to a certain point. A trait of solution to this problem was observed in Nano carbide free bainitic (NCFB) on high silicon steel which has the potential to provide higher strengths along with better ductility. Thus, the nano carbide free bainite on high silicon steel is in demand for various engineering and industrial applications. This has steered a need of research in these materials which not only possess better strengths but also has better ductility. In the present work the specimens were austenitized at 900°C and then austempered at 250°C, 300°C and 350°C for 10, 20,30 and 40 minutes to get a wide range of different bainitic lath thickness and volume fraction. A novel method of obtaining the nano bainite through the shot peening process have been applied on the specimens after which impact toughness test have been performed on all the samples for the enhanced and detailed analysis of the microstructure. The impact strength of these specimens in Charpy test comes out to be 81.7J which is comparable to the known data.

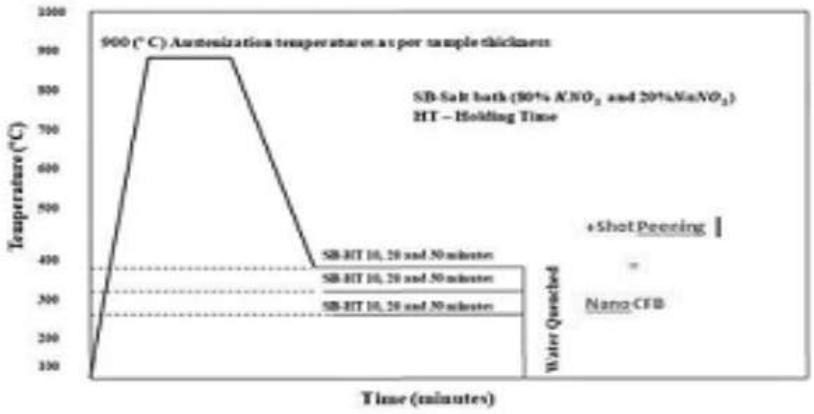


Figure 1. Heat treatment cycle used in present work

No. of Pages : 18 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019552 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NON-INVASIVE HYPOGLYCEMIC & HYPER GLYCEMIC AT-POINT-OF-CARE DIAGNOSTIC SENSOR BASED DEVICE

(51) International classification :A61B0005000000, A61B0005145000, G01N0033543000, A61B0005010000, G01N0033660000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)IES College of Technology Bhopal
Address of Applicant :IES College of Technology, Main Road, Kali Kheda, Ratibad, Madhya Pradesh -462044 ---------- ----------
2)Dr. Preeti Chincholikar
3)Dr. Subhendu Chakroborty
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Preeti Chincholikar
Address of Applicant :Associate Professor, Department of Chemistry, IES College of Technology, Main Road, Kali Kheda, Ratibad, Madhya Pradesh - 462044 ---------- ----------
2)Dr. Jitendra Malviya
Address of Applicant :Associate Professor, Department of Life Sciences and Biological Sciences, IES University, Main Road, Kali Kheda, Ratibad, Madhya Pradesh - 462044 ---------- ----------
3)Dr. Renu Shrivastava
Address of Applicant :Associate Professor, Department of Humanities, IES University, Main Road, Kali Kheda, Ratibad, Madhya Pradesh - 462044 ---------- ----------
4)Dr. Subhendu Chakroborty
Address of Applicant :Assistant Professor, Department of Basic sciences, IES University, Bhopal, Madhya Pradesh - 462044 ---------- ----------
5)Mr. Hemant Sharma
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, IES University, Bhopal, Madhya Pradesh - 462044 ---------- ----------
6)Mr. Jamvant Omkar
Address of Applicant :Assistant Professor, Department of Electronics and Communication Engineering, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
7)Mr. Vijay Dhote
Address of Applicant :Assistant Professor, Department of CSE, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
8)Dr. Rashmi Shrivastava
Address of Applicant :Basic Sciences, Associate Professor, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------
9)Dr. Sonali Sah
Address of Applicant :Basic Sciences, Associate Professor, IES College of Technology, Bhopal, Madhya Pradesh - 462044 ---------- ----------

(57) Abstract :
This invention relates to NON-INVASIVE Hypoglycemic & Hyper Glycemic at-point-of-care diagnostic sensor based Device. The concept has been taken into considering the diabetic patients. These people have to get their blood sugar levels checked frequently, for which a puncture in their veins or pricking fingers is inevitable for 2 or more times, based on the frequency of monitoring of blood sugar levels. After which the reports of their blood sugar levels are assayed and the medications are altered accordingly. This has been a practice since decades. Our concept is to develop a non invasive diagnostic device that can be utilized to monitor blood sugar levels through assessing the presence of chemicals in the breath of diabetic patients. In high glucose & low glucose conditions of the body, the metabolites as a by-products generated are different in both the cases. This is liberated in breath of the patient that can be used to detect by using certain enzymes & antibodies

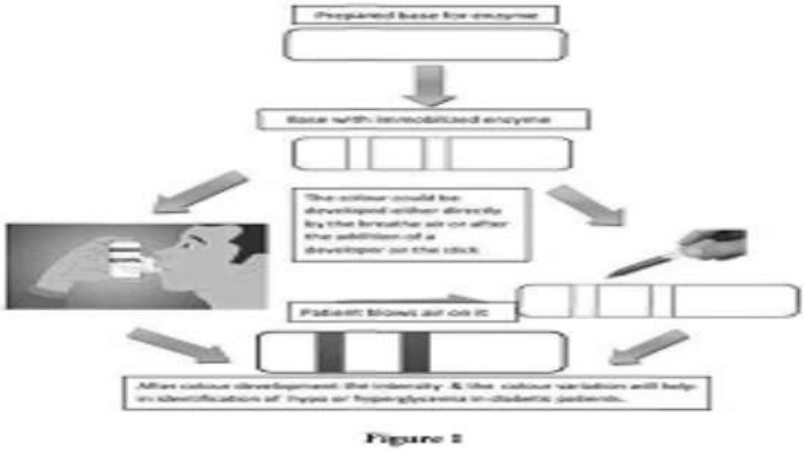


Figure 1

No. of Pages : 9 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202221019584 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A PROCESS OF CASTING OF CONCRETE PAVEMENT WITH STEEL FIBERS

(51) International classification :E04G0023020000, E01C0007140000, C04B0014480000, C04B0041000000, E01C0023090000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)KADAM SHRIGANESH SHANTIKUMAR
Address of Applicant :4640/A GATADE PLOT, PANDHARPUR ---------- ----------
2)PAWAR YASHWANT PRABHAKAR
3)LAKADE GANESH DHARESHWAR
4)GAIKWAD ROHIT LAXMAN
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KADAM SHRIGANESH SHANTIKUMAR
Address of Applicant :4640/A GATADE PLOT, PANDHARPUR ---------- ----------
2)PAWAR YASHWANT PRABHAKAR
Address of Applicant :AT/PO- PANDHARPUR, TAL PANDHARPUR -, DIST-SOLAPUR – 413304 ---------- ----------
3)LAKADE GANESH DHARESHWAR
Address of Applicant :AT/PO- YASHWANTNAGAR, SANGLI - , DIST-SANGLI – 416416 ---------- ----------
4)GAIKWAD ROHIT LAXMAN
Address of Applicant :AT/PO- WAGHOLI, KOREGOAN, DIST-SATARA – 415525 ---------- ----------

(57) Abstract :
A process of construction of concrete pavement with steel fiber at particular location in concrete pavement was developed. At such location tensile cracks are tightly held together and cracks will not penetrate further which enhance the strength and durability of concrete pavement. At such position steel fibers acts as crack arrester to tensile cracks in concrete pavement.

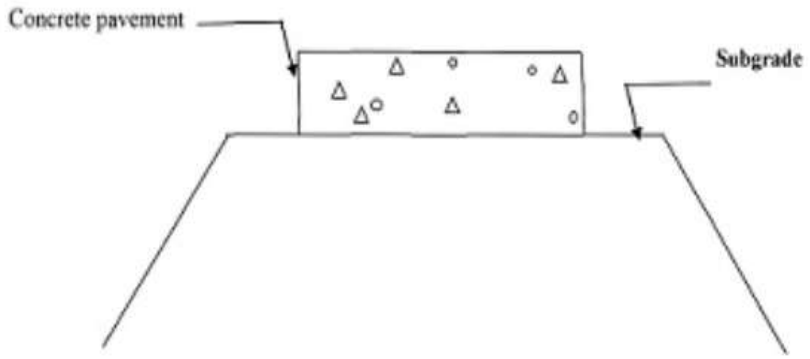


FIGURE. 1

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202223019813 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEEP LEARNING METHOD TO DETECT CHEST X RAY OR CT SCAN IMAGES BASED ON HYBRID YOLO MODEL

(51) International classification :G06N0003040000, G06K0009000000, G06N0003080000, G06T0007000000, G06K0009620000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :
Filed on :01/01/1900
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Manentia Advisory Private Limited
Address of Applicant :A-44 Rosedale County-I, Sundarpura, Taluka- Vadodara Vadodara Gujarat India 391240 ---------- ----------
2)Pandit Deendayal Energy University
3)PDEU Innovation and Incubation Centre
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)ANUJ CHANDALIA
Address of Applicant :2 S.V.P ROAD JAMNAGAR Gujarat India 361001 ---------- ----------
2)HITESH GUPTA
Address of Applicant :2 S.V.P ROAD JAMNAGAR Gujarat India 361001 ---------- ----------

(57) Abstract :
Abstract Present invention relates to system and method for novel model building which is accurate, fast and automatic to quantify severity of seventeen lung diseases and provides RGB coloured heat map based images to represent diseases severity, and is capable for CT Scan and X-ray both image scanning via same system. It represents Deep Learning Method based on hybrid YOLO CNN model, which is based on multiple neural network parameters, powered by YOLO Framework in which YOLO is a convolution neural network which consists of at least twenty-four convolutional layers, followed by at least two fully connected layers. The present novel system, after the analysis of images it under-go for the diagnosis process where the disease severity prediction takes place and it also plot the boundary-boxes where actual diseases are being predicted with different colors of squared boxes and their confidence.

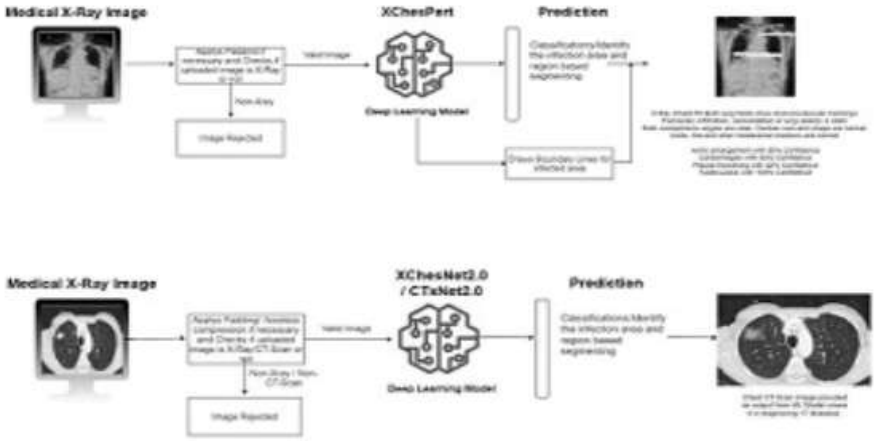


Figure 8: System Process

No. of Pages : 31 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2021

(21) Application No.202141013123 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SPOT WELDING LESS MODULAR BATTERY PACK ASSEMBLY SYSTEM

(51) International classification	:H01M0002100000, H01M0002200000, B60L0003000000, H01M0010480000, H01M0002300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Praveen Bhaskar Reddi
Address of Applicant :ElecXion Energy Private Limited, D.No: 14-437/87/2 , Rajeev Nagar, Sec-3, Arilova, Visakhapatnam, Andhra Pradesh, 530040, India ---------- ----------
2)Sourya Pradeep Taduthuri
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Praveen Bhaskar Reddi
Address of Applicant :ElecXion Energy Private Limited, D.No: 14-437/87/2 , Rajeev Nagar, Sec-3, Arilova, Visakhapatnam, Andhra Pradesh, 530040, India ---------- ----------
2)Sourya Pradeep Taduthuri
Address of Applicant :ElecXion Energy Private Limited, D.No: 14-437/87/2 , Rajeev Nagar, Sec-3, Arilova, Visakhapatnam, Andhra Pradesh, 530040, India ---------- ----------
3)Giridhar Potnuru
Address of Applicant :ElecXion Energy Private Limited, D.No: 14-437/87/2 , Rajeev Nagar, Sec-3, Arilova, Visakhapatnam, Andhra Pradesh, 530040, India ---------- ----------

(57) Abstract :
Disclosed is a battery assembly system (100) that includes a top connector (102) that further includes a first top closure (114), a first Printed Circuit Board (PCB) (116), and a first bottom closure (118). The battery assembly system (100) further includes a holder tray (104), and a bottom connector (106). The battery assembly system (100) provides assembly to one or more batteries (110) in a pressurized mechanism.

No. of Pages : 29 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2021

(21) Application No.202141014729 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ORAL LIQUID FORMULATION OF METFORMIN, TENELIGLIPTIN, VITAMIN 12, ATORVASTATIN AND LEVOTHYROXINE FOR DIABETES

(51) International classification :A61K0031155000, A61K0031198000, A61K0009200000, A61K0009000000, A61K0031496000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Boggarapu Prakash Rao
Address of Applicant :#283, Sree Sai Nilaya, First Floor, 7th Cross, 3rd Main, Duo Heights Layout, Off Begur Road, Begur, Near Bande Park, Bangalore-560 068, Karnataka, India. ----------
2)Mrs. Shravya Boggarapu
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Boggarapu Prakash Rao
Address of Applicant :#283, Sree Sai Nilaya, First Floor, 7th Cross, 3rd Main, Duo Heights Layout, Off Begur Road, Begur, Near Bande Park, Bangalore-560 068, Karnataka, India ----------
2)Dr. Kalavathy Doddabandara Javaregowda
Address of Applicant :No. 100, 1st Main, Opposite Government Primary School Mysore Road, Byatarayanapura Bangalore-560026 Karnataka India ---------- ----------
3)Dr. Rashmi Mathews
Address of Applicant :Flat No.208, Providence Apartment, #10 BDS Gardens Main Road, Gedalahalli, Kothanur PO Bangalore-560077 Karnataka India ---------- ----------
4)Mrs. Buvanagiri Sudha
Address of Applicant :#283, Sree Sai Nilaya, First Floor 7th Cross, 3rd Main, Duo Heights Layout, Off Begur Road, Begur, Near Bande Park Bangalore-560068, Karnataka, India ----------
5)Mr. Gutta Prabhakar Rao
Address of Applicant :Plot No 137, Brindavan Colony, Near Jntu Kukatpally, Nizampet Road Hyderabad-500085 Telangana, India ---------- ----------

(57) Abstract :
An oral liquid formulation of metformin, teneligliptin, vitamin 12, atorvastatin and levothyroxine for diabetes [0066] The invention discloses the formulation, which is a combination therapy for treatment of type 2 diabetes in patients. The formulation comprises 200 mg to 1000 mg metformin HCl, 10 mg to 40 mg teneligliptin, 0.0024 mg to 0.024 mg vitamin B12, 0.005 mg to 0.050 mg levothyroxine sodium, 5 mg to 10 mg atorvastatin, 450 mg to 1500 mg Poloxamer 407 or 188, 100 mg to 300 mg sorbitol, sodium benzoate and water. The bitter taste of the aqueous formulation is masked by a formulation comprising 3 to 37 % w/v Poloxamer or poloxamine, 0.1 to 2 % w/v HPMC, 0.1 to 3% w/v liposomes and optionally maltodextrin. The formulation is safe, cost-effective, results in sustained release of drug for 24 hours and is suitable for oral administration in patients with type 2 diabetes. (Figure 1)

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2021

(21) Application No.202141015864 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GEAR SYSTEM FOR A BICYCLE

(51) International classification :F16H0001280000, B62M0006550000, B62M0011140000, B62M0011160000, B62M0001360000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Skyraptor India Pvt Ltd,
Address of Applicant :3rd Floor, Phase II, IIT Madras Research Park, Kanagam Road, Taramani, Chennai 600113, India
---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)KARUPPUSAMY, Arunkumar
Address of Applicant :3rd Floor, Phase II, IIT Madras Research Park, Kanagam Road, Taramani, Chennai 600113, India ---------- ----------

(57) Abstract :
The invention discloses a gear system for bicycles. The gear system comprises a disintegrated crank axle shaft and the driver sprocket such that their rotational speeds are different. The gear system comprises an epicyclic gear system with a ring gear, planetary gears and a sun gear and the sun gear is coupled to an idler gear and a compound gear to deliver the output to the driver sprocket. With smaller number of moving components, manufacturability, assembly and improved serviceability. Reliability is improved and pedaling effort on the part of the rider is reduced. Thus the gear system provided to the bicycle enables easy riding and also gives enhanced tractive effort and riding comfort speed for the rider and improving overall efficiency. A ring gear encasing the planetary pinions, and a carrier to which the planetary pinions are attached provided to prevent the bicycle from derailing, quickens the shifting process

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/04/2021

(21) Application No.202141017815 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMMON CHASSIS DESIGN FOR TWO-WHEELER VARIANTS

(51) International classification	:B60K0001040000, B62K0019400000, B60L0050600000, B62D0021100000, B62J0011000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Aventose Energy Private limited
Address of Applicant :C33, Arihant Amara, High Road No 49 Poonamallee, Chennai, TN 600056, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vilas Tank
Address of Applicant :C33, Arihant Amara, High Road No 49 Poonamallee, Chennai, TN 600056, India ---------- ----------

(57) Abstract :
ABSTRACT The present invention provides a common chassis design (100) for electric motor vehicles. The common chassis design includes a first downtube (102a) and a second downtube (102b) positioned parallel to each other. An inner downtube (102c) is positioned between first and second downtubes (102a, 102b). The front portions of the first downtube (102a) and the second downtube (102b) are coupled to a neck stem (104). The first downtube (102a) and the second downtube (102b) are horizontally coupled via a plurality of bars (116) and parallel plate stiffeners (126). The common chassis design (100) further includes seat support section (106) in rear portion, battery mounting section (114), and motor mounting section (118). The present invention facilitates mounting of same components in plurality of variants of electric two-wheeler resulting in less component types to be maintained. The mounting of same components across variants increases component volumes and reduces overall cost and inventory requirements. (Figure to be published along with abstract: Figure 2).

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/04/2021

(21) Application No.202141019671 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR OPERATING AUTOMOBILES WITH AN ELECTRIC DRIVETRAIN

(51) International classification	:B60L0003000000, B60H0001000000, B60L0003040000, G07C0005080000, B60L0058270000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Aventose Energy Private limited
Address of Applicant :C33, Arihant Amara, High Road No 49 Poonamallee, Chennai, TN 600056, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vilas Tank
Address of Applicant :C33, Arihant Amara, High road No 49 Poonamallee, Chennai, TN 600056 ---------- ----------
2)Geeth Prajwal Reddy P
Address of Applicant :1/9, Prajwal's The Hive, Kamaraj Nagar, 2nd Street, Sathya Garden, Saligramam, Chennai - 600093 ---------- ----------
3)Nikhil Warwadekar
Address of Applicant :Bhavdeep RH No. 9, Neelshilp C.H.S, Thane Bhiwandi Road, Kalher, Thane 421302 ---------- ----------

(57) Abstract :
ABSTRACT The present invention provides a system and method for operating automobiles with an electric drivetrain, which activates the safe mode operation of the electric drive train in case of vehicle fault detection. The present invention provides a system for operating automobiles with the electric drivetrain which includes an event monitoring module (108) which is configured to detect a predefined set of events and a safe mode activation module (110) which is configured to automatically activate the safe mode operation upon detection of the predefined set of events reducing the probability of the rider being stranded due to vehicle faults. During the safe mode operation the vehicle parameters including power, torque, discharge current and speed are restricted reducing the probability of the components reaching their safe operating limits limits. Further the safe mode operation is deactivated when the plurality of parameters restores to its normal operational conditions. (Figure to be published along with abstract: Figure 1).

No. of Pages : 34 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/05/2021

(21) Application No.202141021250 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A HYDRAULIC TORQUE CONVERTER WITH IMPROVED TORQUE ABSORPTION CAPACITY

(51) International classification :F16H0045020000, F16H0041260000, B25B0023145000, B01J0037020000, F01N0003280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)BEML Limited
Address of Applicant :BEML Limited, BEML Soudha, 23/1, 4th Main, Sampangirama Nagar, Bengaluru – 560027, Karnataka, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)JEYAKUMAR, Senthurpandi
Address of Applicant :BEML Limited, BEML Soudha, 23/1, 4th Main, Sampangirama Nagar, Bengaluru – 560027, Karnataka, India ---------- ----------
2)MADHUSUDHAN, Bangalore Hari Rao
Address of Applicant :BEML Limited, BEML Soudha, 23/1, 4th Main, Sampangirama Nagar, Bengaluru – 560027, Karnataka, India ---------- ----------
3)SASIKUMAR, Muniswamy
Address of Applicant :BEML Limited, BEML Soudha, 23/1, 4th Main, Sampangirama Nagar, Bengaluru – 560027, Karnataka, India ---------- ----------
4)BHARATH, Shivanna
Address of Applicant :BEML Limited, BEML Soudha, 23/1, 4th Main, Sampangirama Nagar, Bengaluru – 560027, Karnataka, India ---------- ----------

(57) Abstract :
The present subject matter discloses a hydraulic torque converter (20) with enhanced torque absorption capacity and efficiency. In one embodiment, the hydraulic torque converter (20) comprises an impeller (220A, 240A), a turbine (210, 250) and a stator (230, 260). The impeller of the hydraulic torque converter is coupled to an engine (10) output, the turbine is coupled to transmission (40) input and the stator (230, 260) is located between the impeller (220A, 240A) and turbine (210, 250). Further, the impeller of the hydraulic torque converter has inverted blade design (520, 720) to improve the torque absorption capacity and efficiency. In another aspect, the hydraulic torque converter is any of squash type hydraulic torque converter (201) or round type hydraulic torque converter (202).

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2021

(21) Application No.202141055872 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A smart photovoltaic tied unified power quality conditioner system

(51) International classification :H02J0003010000, G01R0019250000, H02J0003180000, H04W0048180000, H04L0029080000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Vellore Institute of Technology
Address of Applicant :Near Katpadi Road, Vellore-632 014, Tamil Nadu, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Santanu Kumar Dash
Address of Applicant :TIFAC-CORE, Vellore Institute of Technology, Near Katpadi Road, Vellore-632 014, Tamil Nadu, India. ---------- ----------
2)Dr. D. Elangovan
Address of Applicant :TIFAC-CORE, Vellore Institute of Technology, Near Katpadi Road, Vellore-632 014, Tamil Nadu, India ---------- ----------

(57) Abstract :
A smart photovoltaic tied unified power quality conditioner system [0023] The invention relates to a smart photovoltaic tied unified power quality conditioner system. The system comprises a plurality of IOT modules (101) to capture one or more signals by using one or more current and voltage sensors (102) located on the smart photovoltaic tied unified power quality conditioner system (100). A remote computer configured to receive the signals from the IOT modules (101). The remote computer monitors the voltage and current disturbances at grid side and consumer load side by using the received signals from the IOT modules (101). The remote computer monitors the level of total harmonic distortions, a DC link voltage level, a maximum power generated by the smart photovoltaic tied unified power quality conditioner system (100) to analyse the operation of the system (100). (FIGURE 1)

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/03/2022

(21) Application No.202241015004 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : To Monitor Drowsy Drivers Visual Behavior Using Support Vector Machine and the Histogram of Oriented Gradients

(51) International classification :G06K0009000000, G06K0009620000, G06K0009460000, B60K0028060000, G06K0009320000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)NARAYANANAN MADESHAN
Address of Applicant :Dr.M.Narayanan Plot No: 3-167/B-10/B, G Floor, Sri Ram Nagar, Sri Krishna Nagar Road, Suraram Village, Suraram, Qutubullapur, IDA Jeedimetla, Medchal–Malkajgiri District, Hyderabad, Telangana Pin: 500055 ---------- ----------
2)Dr. N. SHANMUGASUNDARAM
3)Dr. SASIKALA DHAMODARAN
4)Dr. JAYAPRAKASH CHINNADURAI
5)Dr. HAMELA K
6)Dr. UMA PRIYADARSINI P.S
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. M. NARAYANAN
Address of Applicant :Professor & HOD Department of CSE St. Martin's Engineering College, Secunderabad, Telangana, India ---------- ----------
2)Dr. N. SHANMUGASUNDARAM
Address of Applicant :Professor, Department of ECE, Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu, India ---------- ----------
3)Dr. SASIKALA DHAMODARAN
Address of Applicant :Thirunagar, Dhanalakshmipuram, Trichy Road, Singanallur,Coimbatore (South), Tamil Nadu, India ---------- ----------
4)Dr. JAYAPRAKASH CHINNADURAI
Address of Applicant :405 Panchasara Block, Pandiya Homes, TPM Nagar, Viratipathu, Madurai -16, Tamil Nadu,India ---------- ----------
5)Dr. HAMELA K
Address of Applicant :Assistant Professor and Head, Department of Computer Science, Government First Grade College, Malur 563160, Karnataka, India ---------- ----------
6)Dr. UMA PRIYADARSINI P.S
Address of Applicant :Professor Department of CSE, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Thandalam, Chennai ---------- ----------

(57) Abstract :
Drunk driving is one of the primary causes of road accidents and deaths. As a result, diagnosing driver fatigue and accompanying symptoms is a hot topic in the scientific community. Vehicle-based, behavioral-based, and physiological-based approaches make up the majority of traditional procedures. Some approaches are intrusive and divert the driver's attention, while others require the deployment of expensive sensors and data processing. Depending on the sensors employed, the system's cost and size will rise. In our patent, we used the Support Vector Machine (SVM) and the Histogram of Oriented Gradients (HOG). The histogram of oriented gradients (HOG) and the linear support vector machine (SVM) are used to recognize objects. In the established system, a webcam records the footage, and image processing techniques are utilized to detect the driver's face in each frame. The eye aspect ratio and mouth opening ratio are computed, and weariness is recognized utilizing developed adaptive thresholding depending on their values, using facial landmarks on the identified face. Machine learning algorithms have also been implemented in offline mode. Figure related to the abstract is Fig. 3.1

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/03/2022

(21) Application No.202241015220 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Nanoparticulate drug delivery system targeting to estrogen receptor over-expressed cells

(51) International classification :A61K0047690000, A61K0047540000, B82Y0005000000, A61K0031704000, G06Q0050200000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Mr. Sanjay Kumar Kuna
Address of Applicant :Research Scholar, Department of Pharmaceutics, GITAM Institute of Pharmacy, GITAM (Deemed to be University), Vishakapatnam, Andhra Pradesh, India, Pincode: 530045 ---------- ----------
2)Mr. Anumula Ramarao
3)Dr. Chandra Sekhara Rao Baru
4)Dr. Chetan D M
5)Dr. D. Sudha
6)Mrs. Mayuri Konda
7)Dr. Dhondiram Tukaram Sakhare
8)Mrs. Badri Nagarani
9)Dr. Bhimraj Gawade
10)Mr. Nellore Manoj Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Sanjay Kumar Kuna
Address of Applicant :Research Scholar, Department of Pharmaceutics, GITAM Institute of Pharmacy, GITAM (Deemed to be University), Vishakapatnam, Andhra Pradesh, India, Pincode: 530045 ---------- ----------
2)Mr. Anumula Ramarao
Address of Applicant :Associate Professor, Department Pharmacology, Chilkur Balaji College of Pharmacy, Aziz Nagar, Near Appa, Moinbad, Hyderabad, Telangana, India, Pin Code: 500 075 ---------- ----------
3)Dr. Chandra Sekhara Rao Baru
Address of Applicant :Professor & Principal, Department of Pharmaceutics, Chilkur Balaji College of Pharmacy, Aziz nagar, Hyderabad, Telangana, India, Pin:500075 ---------- ----------
4)Dr. Chetan D M
Address of Applicant :Associate Professor, Department of Biotechnology, Nitte Mahalinga Adyanthaya Memorial Institute of Technology, Nitte, Karkala TQ, Udupi, Karnataka, India, Pin Code - 574 110 ---------- ----------
5)Dr. D. Sudha
Address of Applicant :Associate Professor, Department of Physics, R.M.K. Engineering College, RSM Nagar, Gummidipoondi Taluk, Kavaraipettai, Tamil Nadu, India, Pincode: 601 206 ---------- ----------
6)Mrs. Mayuri Konda
Address of Applicant :Assistant Professor, Department of Pharmaceutics, School of Pharmacy, Nalla Narasimha Reddy Educational Society's Group of Institutions, Hyderabad, Telangana, India, Pincode: 500 088 ---------- ----------
7)Dr. Dhondiram Tukaram Sakhare
Address of Applicant :Assistant Professor, Department of Chemistry, Shivaji Art's, Comm. & Science College, Kannad District, Aurangabad, Maharashtra, India, Pincode: 431103 ---------- ----------
8)Mrs. Badri Nagarani
Address of Applicant :Assistant Professor, Department of Pharmaceutics, Srikrupa Institute of Pharmaceutical Sciences, Velikatta, Siddipet, Telangana, India, Pincode: 502103 ---------- ----------
9)Dr. Bhimraj Gawade
Address of Applicant :Assistant Professor, Department of Chemistry, Anandrao Dhonde Alias Babaji Mahavidyalaya, Kada, Maharashtra, India, Pincode: 414 202 ---------- ----------
10)Mr. Nellore Manoj Kumar
Address of Applicant :15-356, Gollapalem, Venkatagiri, SPSR Nellore District, Andhra Pradesh, India, Pincode -524132 ---------- ----------

(57) Abstract :
The development of a vector for the targeted delivery of medicines into estrogen receptor overexpressed cells has been announced. In general, the vector of the present invention is comprised of a plurality of Nanoparticle, each of which includes a plurality of targeted moiety conjugated to an outer surface of the Nanoparticle, the moiety being responsible for binding with the estrogen receptor of a target cell, and bioactive agents entrapped within the Nanoparticle or forming complexes with the Nanoparticle. The targeted molecule of the present invention may also be linked to parent medicines in order to facilitate the development of the active drug.

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/03/2022

(21) Application No.202241015294 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SELF ROAD CLEANING ROBOT

(51) International classification :A47L0011400000, A47L0009040000, A47L0007020000, A47L0005340000, A47L0005300000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr. Ummer Farooq Pasha
Address of Applicant :Assistant Professor, Department of Civil Engineering, Ghousia College of Engineering, Ramanagara, Karnataka 562159, India. ---------- ----------
2)Mr. Wahhaj Khalid Ameen
3)Mr. Ujwal K
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Ummer Farooq Pasha
Address of Applicant :Assistant Professor, Department of Civil Engineering, Ghousia College of Engineering, Ramanagara, Karnataka 562159, India. ---------- ----------
2)Mr. Wahhaj Khalid Ameen
Address of Applicant :Graduate Student, Department of Mechanical Engineering, Ghousia College of Engineering, Ramanagara, Karnataka 562159, India. ---------- ----------
3)Mr. Ujwal K
Address of Applicant :Graduate Student, Department of Mechanical Engineering, Ghousia College of Engineering, Ramanagara, Karnataka 562159, India. ---------- ----------

(57) Abstract :
An autonomous road-cleaning robot is equipped with a self-adjusting cleaning head subsystem that consists of a dual-stage brush assembly with counter-rotating, asymmetric brushes, and an adjacent, but independent, vacuum assembly, with the cleaning capability and efficiency of the self-adjustable cleaning head subsystem optimized. In contrast, the power requirements of the self-adjustable cleaning head subsystem are minimized. The self-adjusting cleaning head subsystem of the autonomous floor-cleaning robot is equipped with a side brush assembly for directing particles from beyond the robot's enclosure into the cleaning head assembly.

No. of Pages : 20 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2022

(21) Application No.202241015303 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CHRYSOPHANOL, AN ANTHRAQUINONE OF RUMEX VESICARIUS AS A DIPEPTIDYL PEPTIDASE-IV (DPP-IV) INHIBITOR

(51) International classification	:A61K0036700000, G16B0015000000, A61K0031155000, G16C0020500000, G16B0035000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MAMIDALA ESTARI
Address of Applicant :kakatiya univesity warangal ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MAMIDALA ESTARI
Address of Applicant :kakatiya univesity warangal ---------- ----------
2)Dr. Rakesh Davella
Address of Applicant :Department of Zoology Kakatiya University Warangal-506009 ---------- ----------

(57) Abstract :
ABSTRACT CHRYSOPHANOL, AN ANTHRAQUINONE OF RUMEX VESICARIUS AS A DIPEPTIDYL PEPTIDASE-IV (DPP-IV) INHIBITOR The present invention relates to the Chrysophanol, an anthraquinone of Rumex vesicarius as a Dipeptidyl Peptidase-IV (DPP-IV) inhibitor, more particularly to a Chrysophanol, compound obtained from PubChem database and DPP-IV retrieved from RCSB protein database and bioactivity score, molecular properties obtained from molsoft, drug like-ness score prediction by molinspiration server and screening of anti-diabetic activity by using in silico molecular docking studies with autodock4 software and the docking analysis shows the binding interactions of DPP-IV with Chrysophanol indicates the compound act as DPP-IV inhibitor.

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2022

(21) Application No.202241015485 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IOT BASED DRONE AIRSHIP FOR A LIVE WEATHER MONITORING

(51) International classification	:G01W0001100000, G01D0021020000, G01W0001020000, G01W0001060000, F24F0130100000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mangalore Institute of Technology & Engineering
Address of Applicant :Badaga Mijar, Moodabidri ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Shreekanth Patil
Address of Applicant :Department of Aeronautical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------
2)Kavyashree P
Address of Applicant :Department of Aeronautical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------
3)Aditya
Address of Applicant :Department of Aeronautical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------

(57) Abstract :
The weather at place is always varying with time. It changes not only with time but also with variable space. More often; we assume that it behaves as usual as, we expect. Many a time we come across a situation where the unexpected changes in weather parameters have been observed beyond our expectation. So, it is better if we can forecast weather continuously to know the rainfall drought and other changes. A wireless weather and method for measuring the number of weather parameters extended over the time. The weather data has to be captured continuously to provide the real time transmission. The weather forecast need data from atmosphere for more accurate weather. The atmospheric parameters like temperature, pressure, humidity, wind speed play on measure role in measure the accurate weather. A combination of sensors is used to collect the data from various location. The collected sampling data is based on change of the parameter. The model is particularly well suited for particular weather. In this invent we incorporated the zeppelin mechanism to receive the live upper atmospheric data. The current invention gives a temperature and pressure for sensing of atmosphere.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2022

(21) Application No.202241015491 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NUTRITION REGULATING BOWL AND MOVEMENT ANALYZER FOR CATTLE

(51) International classification :A01K0029000000, G06Q0050220000, G06Q0050020000, A61D0017000000, A61D0003000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)QIS COLLEGE OF ENGINEERING AND TECHNOLOGY
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR.N.S.KALYAN CHAKRAVARTHY
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
2)DR.MERUGU KAVITHA
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
3)TATIPARTHI PRASHANTHL
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
4)KUMMARI MINNURUTVIK KUMAR
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
5)NIDIZIVVI MEGHANA
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
6)L.DEEPAK SAI REDDY
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
7)N. UMA MAHESWAR
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------

(57) Abstract :
India's most precious resource is dairy. In this invention the priority is to protect and improve the health of the cattle. Dairy farmers are not able to pay attention to the health of every animal on the farm these days due to the large number of cattle on the farm. As a result, their cattle are in bad health and their livestock are feeble. Another issue is that because dairy farmers are unable to assess the condition, they are unable to supply the right amount of nutrients. To keep healthy, cattle require a particular amount of nutrients. The design of the plan is to solve these situations and help the cattle. To capture the cattle's movements, the model is deployed with HD picture recognition and capturing AI technology in this invention. HD photo recognition technology is used to record cattle motions such as tail movement, ear movement, nose moisture and rumination. The collected movements are submitted to veterinary doctors for study, resulting in a weekly analysis with less human interference. For the second side of the problem, nutrition analysis of cattle diet, the proposed model is employed with nutrient sensors and weieht sensors to assist the cattle in maintaining their diet. The nutrient sensors and weight sensors in this solution assist in estimating the nutrients and weight of the feed the cattle are consuming, and the information is forwarded to a veterinarian if any irregularities are discovered. And the veterinary practitioner administers the treatment as quickly as feasible. As a result, this invention is assisting the dairy farming industry in helping the cattle in living a healthy life.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2022

(21) Application No.202241015499 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIQIS (AN E-COMMERCE WEBSITE)

(51) International classification	:G06Q0030060000, G06Q0030020000, G06Q0020040000, G06Q0030080000, G06Q0020400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)QIS COLLEGE OF ENGINEERING AND TECHNOLOGY
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR.N.S.KALYAN CHAKRAVARTHY
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
2)DR.MERUGU KAVITHA
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
3)M.VENKATA VAMSI KRISHNA
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
4)M.ANUHYA
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
5)D.PAVAN KUMAR
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
6)SD.MOHAMMAD ALI
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
7)TATIPARTHI PRASHANTHL
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------
8)KUMMARI MINNURUTVIK KUMAR
Address of Applicant :QIS College of Engineering and Technology, Vengamukkapalem, Ongole, Prakasam Dist., Andhra Pradesh, India - 523272. ---------- ----------

(57) Abstract :

No. of Pages : 11 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/03/2022

(21) Application No.202241015509 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Design of a Novel Buck Converter to Mitigate the Electromagnetic Interference in Medical Applications

(51) International classification :H02M0001440000, H02M0007217000, H05K0009000000, H01L0023552000, H01G0004350000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)S.Sasipriya
Address of Applicant :50, Sakthi Nagar, III Street, Kavundampalayam, Coimbatore ---------- ----------
2)Sri Krishna College of Engineering and Technology
3)D.Ruth Anita Shirley
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)S.Sasipriya
Address of Applicant :50, Sakthi Nagar, III Street, Kavundampalayam, Coimbatore ---------- ----------
2)D.Ruth Anita Shirley
Address of Applicant :Sri Krishna College of Engineering and Technology, Kuniyamuthur, Coimbatore. ---------- ----------

(57) Abstract :
Most of the electrical systems experience Electro-magnetic Interference (EMI) when they are used along with another electrical system. This unwanted effect is caused due to electro-magnetic induction or electro-magnetic conduction. Especially, in the medical applications of Switched Mode Power Supplies (SMPS), the effect of EMI is very adverse. Also, the commonly used semiconductor based medical devices yields unavoidable EMI noise due to its switching activities which results in discontinuous flow of current in the systems. Apart from functional issues, space constraint, cost and robustness, the major challenge is EMI control in the design of medical devices. This invention presents a novel design of buck converter to suppress the effect of EMI in the electrical circuits or systems which deals with very high frequencies. Since the proposed buck converter is exhibiting great resistant to EMI for high frequencies, it is clearly evident that this novel invention is significant in the design of medical devices.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015628 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Mathematics Question Prediction using Natural Language Processing

(51) International classification	:G06F0016330000, G16H0010200000, G06K0009200000, G06F0030367000, G06F0040300000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Yogeesh N
Address of Applicant :Assistant Professor of Mathematics, Department of Mathematics, Government First Grade College, Tumkur, Karnataka, India, PIN : 572102 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Yogeesh N
Address of Applicant :Assistant Professor of Mathematics, Department of Mathematics, Government First Grade College, Tumkur, Karnataka, India, PIN : 572102 ---------- ----------

(57) Abstract :
They are using automated techniques to roll out keywords from the Questions provided from the previous year's Question Papers using a beautiful python library RAKE (Rapid Automated Keyword Extraction) and using those keywords to form a pattern based upon the scores with the stop words used to the pretexts in the library for Keyword Extraction and pattern recognition for University Questions specifically for Mathematics Question Papers. Every Keyword Extracted is accompanied by the keyword's score and numeric weightage of the chances of the Keyword getting repeated in the sample. The paper consists of the absolute accuracy of the model based upon the example provided; The stop-list also affects the final accuracy of the model concerning the piece it is processing.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015629 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : An innovative technique for customer relationship management by using Data mining techniques

(51) International classification :G06Q0030020000, G06Q0010060000, G06F0016280000, G06F0016245800, G06F0016300000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Padmakar Shahare
Address of Applicant :Associate Professor, Department of Management, Jain (Deemed-To-Be) University, Bangalore, Karnataka, India ---------- ----------
2)N.Lavanya
3)Dr. Mukesh Kumar
4)Dr. Pravin Kumar Agrawal
5)Dr. Shrish Kumar Tiwari Dr. Shrish Kumar Tiwari Dr. Shrish Kumar Tiwari
6)Dr. Kiran Dnyaneshwar Gonte
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Padmakar Shahare
Address of Applicant :Associate Professor, Department of Management, Jain (Deemed-To-Be) University, Bangalore, Karnataka, India ---------- ----------
2)N.Lavanya
Address of Applicant :Assistant Professor & Head, Department of Business Administration, Sri Sarada College for Women (Autonomous) Affliated to Manonmaniam Sundaranar University Ariyakulam, Tirunelveli 627011 Tamil Nadu, India ---------- ----------
3)Dr. Mukesh Kumar
Address of Applicant :Assistant Professor, Faculty of Management Studies Gopal Narayan Singh University, Jamuhar (Bihar), India ---------- ----------
4)Dr. Pravin Kumar Agrawal
Address of Applicant :Assistant Professor, Department of Business Management, Chhatrapati Shahu Ji Maharaj University, Kanpur India ---------- ----------
5)Dr. Shrish Kumar Tiwari Dr. Shrish Kumar Tiwari Dr. Shrish Kumar Tiwari
Address of Applicant :Assistant professor, Co-ordinator - Centre for Studies in Strategic Technologies, Cyber/Space School of National Security Studies, Central University of Gujarat, Gandhi Nagar Gujarat - India ---------- ----------
6)Dr. Kiran Dnyaneshwar Gonte
Address of Applicant :Pravara Rural Education Society's, College of Agriculture Business Management, Loni, Maharashtra ---------- ----------

(57) Abstract :
Advancements in technology have made relationship marketing a reality in recent years. Data warehousing, data mining, and campaign management software have created customer relationship management, a new area where organisations can obtain a competitive advantage. Mainly through data mining—the extraction of hidden predictive information from massive databases—organisations may identify critical consumers, forecast future actions, and empower enterprises to make proactive, knowledge-driven decisions. The automated, future-oriented analyses made feasible by data mining move beyond analysing past occurrences generally offered by history-oriented instruments such as decision support systems. Data mining techniques solve business problems that were too time-consuming to pursue in the past. Yet, the answers to these questions make customer relationship management feasible. Various strategies exist among data mining tools, each with advantages and obstacles for different applications. A particular contrast occurs between neural networks and chi-square automatic interaction detection (CHAID). While diverse methodologies abound in data mining, the utilisation of some data mining is vital to meet the aims of today's customer relationship management concept.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015663 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LOW-COST POTABLE WATER PURIFIER

(51) International classification :C02F0001440000, C02F0101200000, C02F0001280000, C02F0001660000, C02F0009000000
(86) International Application No :PCT// /
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.V.Yogeshwaran
Address of Applicant :Assistant Professor, Sri Krishna College of Engineering and Technology, Coimbatore. ---------- ----------
2)Mr.M.R.Ezhilkumar
3)Dr.S.Seenivasan
4)Mr. P.R.Riyas
5)Vignesh.T
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.V.Yogeshwaran
Address of Applicant :Assistant Professor, Sri Krishna College of Engineering and Technology, Coimbatore. ---------- ----------
2)Mr.M.R.Ezhilkumar
Address of Applicant :Assistant Professor, Sri Krishna College of Engineering and Technology, Coimbatore. ---------- ----------
3)Dr.S.Seenivasan
Address of Applicant :Assistant professor & Head, Dhaanish Ahmed institute of technology, Coimbatore. ---------- ----------
4)Mr. P.R.Riyas
Address of Applicant :Assistant Professor, Dhaanish Ahmed institute of technology, Coimbatore. ---------- ----------
5)Vignesh.T
Address of Applicant :Assistant Professor, Sri Krishna College of Engineering and Technology, Coimbatore ---------- ----------

(57) Abstract :
Removal of TDS and Heavy metals from the drinking water is one of the major problems in water treatment technology. Many methods are used to remove this high amount of TDS & Heavy metal concentration such as Membrane process, Filtration process, Adsorption, Ion exchange, Reverse Osmosis etc. But due to the high cost, too much rejection of feed water, requirement of chemicals and other chemical requirements these methods are not effectively used. Adsorption cum filtration process is the process which is used in recent days to remove the Dissolved Solids & heavy metals from the drinking water with high efficiency level. The main problem in this process is too much amount of water rejection, usage of harmful chemicals, power consumption. Even though, some kind of heavy metals such as Pb2+, Cr6+ etc., (size <10-6) are not completely removed in the existing type purification system. To avoid these kinds of problems, Adsorption cum filtration system has been used in this research work. Two different types of treatment method (Adsorption and Filtration) are used in this low-cost purification system. The adsorbent (Banana Peels) is used to remove the heavy metal and dissolved salt contamination and the Membrane (Glass Fibre) is used to remove the micro level contaminated particles from the feed water.

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015666 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART JACKET FOR REMOTE PATIENT MONITORING USING WI-SUN TECHNOLOGY

(51) International classification :A61B0005000000, G06Q0050220000, G16H0010600000, G16H0040630000, G16H0050300000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Karpaga Vinayaga College of Engineering and Technology
Address of Applicant :Karpaga Vinayaga College of Engineering and Technology, GST Road, Chinnakolambakkam, Palayanoor Post, Madhuranthagam Taluk, Chengalpet Dist – 603 308. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MUTHUMARI. P
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Department of Computer Science and Engineering, Karpaga Vinayaga College of Engineering and Technology, GST Road, Chinnakolambakkam, Palayanoor Post, Madhuranthagam Taluk, Chengalpet Dist – 603 308. ---------- ----------
2)SANGEETHA.T
Address of Applicant :Assistant Professor, Department of Bio Medical Engineering, Department of Computer Science and Engineering, Karpaga Vinayaga College of Engineering and Technology, GST Road, Chinnakolambakkam, Palayanoor Post, Madhuranthagam Taluk, Chengalpet Dist – 603 308. ---------- ----------
3)DR.P. KASINATHA PANDIAN
Address of Applicant :Professor, Department of Civil Engineering Department of Computer Science and Engineering, Karpaga Vinayaga College of Engineering and Technology, GST Road, Chinnakolambakkam, Palayanoor Post, Madhuranthagam Taluk, Chengalpet Dist – 603 308. ---------- ----------
4)DR. R. DELSHI HOWSALYA DEVI
Address of Applicant :Professor, Department of Computer Science and Engineering, Karpaga Vinayaga College of Engineering and Technology, GST Road, Chinnakolambakkam, Palayanoor Post, Madhuranthagam Taluk. Chengalpet Dist – 603 308. ---------- ----------

(57) Abstract :
RPM (Remote Patient Monitoring) is a type of healthcare delivery that collects patient data outside of typical healthcare facilities using the latest breakthroughs in information technology. Patients' medical and other health data is monitored and captured using RPM digital technology, which is then electronically transmitted to healthcare providers for assessment and, if necessary, recommendations and instructions. In this invention, designed a smart jacket for remote patient monitoring using WI-SUN technology. It's part of a wireless communications network that links medical gadgets in the home to generate ultra-big data for personal health care analysis. With their low power consumption – some can run on gathered energy and don't use batteries at all – they provide a convincing case for 'green' technology. A smart jacket with an environment sensor that measures ambient parameters like temperature and humidity and to show how they affect physical activity, Temperature Sensor, Heart Beat Sensor, Respiratory Sensor, Pressure Sensor, PIR Sensor, Glucose Sensor and Buzzer. Sensor data is captured and sent to the cloud, where it is examined by a doctor and used to detect any anomalies. If the data reveals any unusual symptoms, the health-care tool that uses big data analysis recognizes the change and alerts the patient's doctor. Before major problems arise, the doctor can respond immediately and advise on necessary medical interventions. The gateways use Wi-SUN HAN to share pairing information, ensuring that the smart jacket is always connected to the nearest gateway. This device continuously monitors the patient's health state and can save their lives if any irregularities are discovered.

No. of Pages : 15 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015672 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Nanorobotics for medical applications using NEMS and MEMS

(51) International classification :B82Y0030000000, B81C0001000000, B81B0003000000, G09G0003200000, A61B0017000000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr.S.Bathrinath
Address of Applicant :Associate Professor, Department of Mechanical Engineering, Kalasalingam Academy of Research and Education, Krishnankoil, Tamilnadu, India, Pincode: 626126 ---------- ----------
2)Dr. P. Lakshmi Prasanna
3)Dr. A. Shanmuganathan
4)Dr. M.S.Srinivasa Rao
5)Mr. M. Kalyan Chakravarthi
6)Mr. Nellore Manoj Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.S.Bathrinath
Address of Applicant :Associate Professor, Department of Mechanical Engineering, Kalasalingam Academy of Research and Education, Krishnankoil, Tamilnadu, India, Pincode: 626126 ---------- ----------
2)Dr. P. Lakshmi Prasanna
Address of Applicant :Associate Professor, School of Management, Presidency University, Bangalore, Karnataka, India, Pincode: 560064 ---------- ----------
3)Dr. A. Shanmuganathan
Address of Applicant :Professor, Department of Mechanical Engineering, NIMS University, Jaipur, Rajasthan, India, Pin Code : 303121 ---------- ----------
4)Dr. M.S.Srinivasa Rao
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad, Bachupally, Telangana, India, Pincode: 500 090 ---------- ----------
5)Mr. M. Kalyan Chakravarthi
Address of Applicant :Senior Assistant Professor, School of Electronics Engineering, VIT-AP University, Amaravathi, Andhra Pradesh, India Pincode: 522237 ---------- ----------
6)Mr. Nellore Manoj Kumar
Address of Applicant :15-356, Gollapalem, Venkatagiri, SPSR Nellore District, Andhra Pradesh, India, Pincode -524132 ---------- ----------

(57) Abstract :
Nanotechnology and nanorobotics, this invention is of particular significance. The system is concerned with epigenetic robotics, which is applied to groups of nanorobots. Specific to nanoelectromechanical systems (NEMS) and microelectromechanical systems (MEMS), nanomechatronics, and bionanomechatronics, the innovation is directed toward developing these systems. Also covered by the invention are methods for coordinating collectives of nanorobots, synthetic nanorobotics, and synthetic bio nanorobotic. These methods include the creation of synthetic assemblies of NEMS and nanorobots and the assembly of synthetic machines at the nano- and micron-scales.

No. of Pages : 22 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241015799 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SIM'S ORIENTATION INDICATOR

(51) International classification :F21V0035000000, A61C0019040000, B27G0017020000, F21V0019020000, G02B0007182000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)TAGORE DENTAL COLLEGE AND HOSPITAL
Address of Applicant :TAGORE DENTAL COLLEGE AND HOSPITAL MELAKOTTAIYUR, RATHINAMANGALAM CHENNAI TAMIL NADU INDIA 600127 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR NARASIMMAN MUTHUSAMY
Address of Applicant :PLOT NO 18, GROUND FLOOR GNANARAJ SALAI, SEMBAKAM KANCHEEPURAM CHENNAI TAMIL NADU INDIA 600073 ---------- ----------
2)DR CAKKU JALLIAH VENKATAKRISHNAN
Address of Applicant :PLOT NO 4 VALLIAMAI NAGAR, 2 STREET, VALASARAVAKKAM CHENNAI TAMIL NADU INDIA 600087 ---------- ----------
3)DR RATHINAVEL PANDIAN MANICKAVEL
Address of Applicant :DF4 TNPHC, MELAKOTTAIYUR CHENNAI TAMIL NADU INDIA 600127 ---------- ----------
4)DR TAMIZHESAI BALAVADIVEL
Address of Applicant :PLOT NO 90B, DOOR NO 8, SILAPATHIKARAM STREET, MC NAGAR, CHITLAPAKAM CHENNAI TAMIL NADU INDIA 600064 ---------- ----------
5)DR SHANKAR ARUMUGAM
Address of Applicant :10/284 D OOTY MAIN ROAD, GUDALUR NILGRIS TAMIL NADU INDIA 643212 ---------- ----------
6)MR RAJA BHARATHI BALAVADIVEL
Address of Applicant :2C MAHALAKSHMI ENCLAVE, RAGAVENDRA STREET, CHITLAPAKKAM CHENNAI TAMIL NADU INDIA 600064 ---------- ----------

(57) Abstract :
TITLE: SIM'S ORIENTATION INDICATOR APPLICANT: TAGORE DENTAL COLLEGE AND HOSPITAL ABSTRACT The present invention discloses a sim's orientation indicator for definite and simple way to orient and correct wax rim, with minimal parallax error and operator error. The orientation indicator of the present invention comprises of metal stem, U-shaped metal plate, antero posterior plane adjustable light holder and frontal plane adjustable light holder characterized in that the metal stem adapted to run in midline of face and configured to hold U-shaped metal plate at the base and the antero posterior plane adjustable light holder and frontal plane adjustable light holder positioned above the base in which, • the U-shaped metal plate adapted to rest on wax rim, • the antero posterior plane adjustable light holder adapted to hold light configured to move superior or inferior to make the light to run in camper's plane, in which the light doesn't accurately pass through the camper plane and the wax rim is melted/added to make the plane more accurate. • the frontal plane adjustable light holder adapted to hold light configured to move superior or inferior to make the light to run in light to run in interpupillary plane, in which the light doesn't accurately pass through the interpupillary plane and the wax rim is melted/added to make the plane more accurate.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2022

(21) Application No.202241016023 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ADJUSTABLE AND ARTIFICIALLY INTELLIGENT CONFIGURABLE TEACHING ASSISTANT ROBOT

(51) International classification	:B25J0009160000, B25J0009000000, B23Q0003060000, B25J0019020000, G09B0025020000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Satyanarayana Mummana
Address of Applicant :Associate Professor, Department of CSE, Raghu Engineering College (A), Visakhapatnam, Andhra Pradesh, India. Pin Code:531162 ---------- ----------
2)Mr.Budimure Ramana Babu
3)Dr.A.Shanmuganathan
4)Dr.Jyothi Sankar P R
5)Dr.Kiron .K. R
6)Mr.Sajith V S
7)Dr.Sreelekshmy Pillai
8)Mr.M.Kalyan Chakravarthi
9)Mr.Sovik Mukherjee
10)Mr.N.Srinivas
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Satyanarayana Mummana
Address of Applicant :Associate Professor, Department of CSE, Raghu Engineering College (A), Visakhapatnam, Andhra Pradesh, India. Pin Code:531162 ---------- ----------
2)Mr.Budimure Ramana Babu
Address of Applicant :Assistant Professor, Department of CSE, Raghu Engineering College (A), Visakhapatnam, Andhra Pradesh, India. Pin Code:531162 ---------- ----------
3)Dr.A.Shanmuganathan
Address of Applicant :Professor, Department of Mechanical Engineering, NIMS University, Jaipur, Rajasthan, India. Pin Code :303121 ---------- ----------
4)Dr.Jyothi Sankar P R
Address of Applicant :Associate Professor, Department of Mechanical Engineering, NSS College of Engineering, Palakkad, Kerala, India. Pin Code:678008 ---------- ----------
5)Dr.Kiron .K. R
Address of Applicant :Associate Professor, Department of Mechanical Engineering, NSS College of Engineering, Palakkad, Kerala, India. Pin Code:678008 ---------- ----------
6)Mr.Sajith V S
Address of Applicant :Associate Professor, Department of Mathematics, NSS College of Engineering, Palakkad, Kerala, India. Pin Code:678008 ---------- ----------
7)Dr.Sreelekshmy Pillai
Address of Applicant :Associate Professor, Department of Civil Engineering, NSS College of Engineering, Palakkad, Kerala, India. Pin Code:678008 ---------- ----------
8)Mr.M.Kalyan Chakravarthi
Address of Applicant :Senior Assistant Professor, School of Electronics Engineering, VIT-AP University, Amaravathi, Andhra Pradesh, India. Pin Code:522237 ---------- ----------
9)Mr.Sovik Mukherjee
Address of Applicant :Assistant Professor in Economics, Department of Commerce (Morning Section), Faculty of Commerce and Management, St. Xavier's University, Kolkata, West Bengal, India. Pin Code: 700160 ---------- ----------
10)Mr.N.Srinivas
Address of Applicant :Associate Professor, Department of ECE, Guru Nanak Institute of Technology,Ibrahim Patnam, RR District, Telangana, India. Pin Code:501506 ---------- ----------

(57) Abstract :
[033] The present invention discloses an adjustable and artificially intelligent configurable teaching assistant robot. The system includes, but not limited to, a base platform provided with a plurality of robot modules having a plurality of holes formed in upper and side portions of the base platform, and the robot modules formed with the plurality of holes having the same shape and size as the holes of the base platform, and the base platform and the robot modules, which is fixed to the coupling means for connecting the hole, and the robot product for education. Further, at least one robot module further comprises a driving means including a motor, the educational robot product. Accompanied Drawing [FIG. 1]

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202241016028 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LASED BASED HYDRAULIC CONTROLLED MACHINE AND METHODS OF LAND LEVELLING AND PLOUGHING THEREOF

(51) International classification :E02F0003430000, E02F0009260000, G01C0015000000, G01S0017080000, E02F0003760000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)K.L.N. COLLEGE OF ENGINEERING
Address of Applicant :Pottapalayam, Sivagangai District ---------- ----------
2)Dr. S. PARTHASARATHY
3)Dr. A.V. RAM PRASAD
4)Prof. S. NALLATHAMBI
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. S. PARTHASARATHY
Address of Applicant :Plot No:5, Door No:16, Alagusundaram Nagar, Madurai 625003 ---------- ----------
2)Dr. A.V. RAM PRASAD
Address of Applicant :173, East Veli Street, Madurai, 625001 ---------- ----------
3)Prof. S. NALLATHAMBI
Address of Applicant :12/1, Basteen Nagar 2nd Street, Bethaniyapuram, Madurai - 625016 ---------- ----------

(57) Abstract :
The present invention belongs to a land levelling machinery, particularly relates to a laser based hydraulic controlled machine, more particularly methods of land levelling and ploughing in real-time, effectively. Said levelling and ploughing machine and method comprising steps of receiving a plurality of light signals from a laser transmitter [101] by a laser receiver [103], actuating a plurality of hydraulic control valves [107] based on the light signals, actuating a plurality of hydraulic cylinders [108] to trigger corresponding movements in a scraper unit [105], controlling the land levelling and/or ploughing operations using the signals transmitted by a plurality of encoders [112], remotely, and maintaining and displaying the levelling and ploughing operations in various remote terminals using a cloud interface [114]. FIGURE 1

No. of Pages : 22 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/03/2022

(21) Application No.202241016053 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HEALTH MONITORING SYSTEM FOR BOVINES, BOAR OR BIRDS BASED ON ARTIFICIAL INTELLIGENCE AND IOT

(51) International classification :G06N0020000000, A01K0029000000, G05D0001000000, G16H0050200000, A01N0063300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. G. Vennira Selvi
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Sri Venkateswara College of Engineering and Technology, Chittoor, Andra Pradesh, India 517127. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. G. Vennira Selvi
Address of Applicant :Assoc. Professor, Department of Computer Science and Engineering, Sri Venkateswara College of Engineering and Technology, Chittoor, Andra Pradesh, India 517127. ---------- ----------
2)D.Semma Dev Aksatha
Address of Applicant :Asst. Professor, Deparatment of Computer Technology, Sri Krishna Adithya College of Arts and Science, Kovaipudur, Coimbatore, Tamil Nadu, India 641042. ---------- ----------
3)H. Shanmugavalli
Address of Applicant :Asst. Professor, Department of Information Technology, Kingston Engineering College, Vellore, Tamilnadu, India 632059. ---------- ----------
4)M. Pooja Poonkuzhali
Address of Applicant :Asst. Professor, Department of Electronics and Communication Engineering, Kingston Engineering College, Vellore, Tamilnadu, India 632059. ---------- ----------
5)Dr. A. Kasthuri
Address of Applicant :Asst. Professor, Department of Computer Science, Arulmigu Subramania Swamy Arts and Science College, Vilathikulam, Thoothukudi Dsitrict, Tamilnadu, India 628907. ---------- ----------
6)Dr. S. Prabavathy
Address of Applicant :Asst. Professor, Department of Computer Applications, Arulmigu Subramania Swamy Arts and Science College, Vilathikulam, Thoothukudi Dsitrict, Tamilnadu, India 628907. ---------- ----------

(57) Abstract :
This study presents a thorough examination of Bovines, Boar health monitoring using an Internet of Things (loT) platform and Artificial Intelligence (Al) techniques. The use of loT devices with different types of sensors, video/image processing and classification capabilities, and vocalization (sound) based Bovines Boar livestock analysis is being investigated for monitoring the Bovines, Boar farm and bird health. The increasing availability of low-cost processing resources, loT sensors, and standard algorithms has created a compelling case for using current technology to continually monitor big farms with millions of birds and enhance overall production. Because Milk is the most common sources of protein, advanced technical solutions for Bovines, Boar farms are essential.

No. of Pages : 6 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016587 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTELLIGENT MEDICINE STORAGE DEVICE AND METHOD THEREOF

(51) International classification :A61J0007040000, A61J0007000000, A47B0067020000, G07F0017000000, A61J0001030000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. A. S. NAVEENKUMAR
Address of Applicant :30/9 J, ANNA STREET, THONDAMUTHUR ROAD, VADAVALLI, COIMBATORE, TAMILNADU, INDIA- 641041. ---------- ----------
2)Dr. S. JAYASHANTHI
3)Dr. SWEETY REGINA MARY S
4)Dr. S. VENNILA FATHIMA RANI
5)Dr. S. JAYAKANI
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. A. S. NAVEENKUMAR
Address of Applicant :30/9 J, ANNA STREET, THONDAMUTHUR ROAD, VADAVALLI, COIMBATORE, TAMILNADU, INDIA- 641041. ---------- ----------
2)Dr. S. JAYASHANTHI
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF COMMERCE(PROFESSIONAL ACCOUNTING), SRI. S. RAMASAMY NAIDU MEMORIAL COLLEGE, SATTUR, VIRUDHUNAGAR DISTRICT, TAMILNADU, INDIA, 626203 ---------- ----------
3)Dr. SWEETY REGINA MARY S
Address of Applicant :G1, CHIDAMBARAM FLAT, CORPORATION COLONY, 3RD STREET, RANGARAJAPURAM, KODAMBAKKAM, CHENNAI, TAMIL NADU, INDIA, 600024 ---------- ----------
4)Dr. S. VENNILA FATHIMA RANI
Address of Applicant :B.3J, JONES SIGIRIYA APARTMENT, CHENNAI, TAMIL NADU, INDIA, 600100 ---------- ----------
5)Dr. S. JAYAKANI
Address of Applicant :72, UC COLONY, CHENNAI, TAMIL NADU, INDIA, 600117 ---------- ----------

(57) Abstract :
The present invention provides an intelligent medicine storage device and a method to pre-order medicine based on the quantity of medicine. Said medicine storage device (1) consists of an outer box (11) and a movable tray (31). The outer box (11) consists of a plurality of LED lights (15), a camera operable button (16), a camera (17), a power button (18), a charging port (19), and an alarm unit (20). The plurality of movable trays (31a, 31b, 31c, 31d, 31e) is movably mounted inside the compartment box (12). Said medicine storage device (1) is connected to a user interface device (3) through a server (4). The method of operating a medicine storage device (1) consists of capturing medicine images, alerting the user (2) regarding the medication intake. Further, said method consists of measuring the quantity of medicine and sending notification to user (2) for pre-order if medicine from retailer (5).

No. of Pages : 27 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016610 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART HEALTH MONITORING SYSTEM

(51) International classification :H04L0029080000, A61B0005000000, A61B0005024000, G01D0021020000, G01K0001020000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Ananthi Kaliyamoorthy
Address of Applicant :2/386B, Sri Balaji Garden, Premier Nagar, ---------- ----------
2)Dr. A. Senthil Kumar
3)Ms. Selvanayakam A
4)Ms. Suganyadevi D
5)Ms. Aarthi N
6)Dr.P.S Mayurappriyan
7)Mrs. Adhisakthi P. K
8)Mr. Karthi K
9)S. Sivamani
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. A. Senthil Kumar
Address of Applicant :Professor and Head, Department of EEE, Dr. Mahalingam College of Engineering and Technology, Udumalai Road, Pollachi ---------- ----------
2)Ms. Selvanayakam A
Address of Applicant :Assistant Professor, Department of EEE, Dr. Mahalingam College of Engineering and Technology, Udumalai Road, Pollachi ---------- ----------
3)Ms. Suganyadevi D
Address of Applicant :Assistant Professor, Department of EEE, Dr. Mahalingam College of Engineering and Technology, Udumalai Road, Pollachi ---------- ----------
4)Ms. Aarthi N
Address of Applicant :Assistant Professor, Department of EEE, Dr. Mahalingam College of Engineering and Technology, Udumalai Road, Pollachi ---------- ----------
5)Dr.P.S Mayurappriyan
Address of Applicant :Professor, Department of E & I, Kumaraguru College of Technology, Coimbatore ---------- ----------
6)Mrs. Adhisakthi P. K
Address of Applicant :Assistant Professor, Department of Humanities, Ramaiah College of Arts, Science and Commerce, Bangalore ---------- ----------
7)Mr. Karthi K
Address of Applicant :Assistant Professor, Department of EEE, VSB College of Engineering, Karur ---------- ----------
8)Ananthi Kaliyamoorthy
Address of Applicant :Assistant Professor, Department of Mechatronics Engineering, Sri Krishna College of Engineering and Technology, Coimbatore ---------- ----------
9)S. Sivamani
Address of Applicant :Assistant Professor, Department of EEE, E.G.S Pillay Engineering College, Nagapattinam. ---------- ----------

(57) Abstract :
Today Internet has become one of the important parts of daily life. It has changed how people live, work, play and learn. Internet serves for many purposes educations, finance, Business, Industries, Entertainment, Social Networking, etc. The IoT is connected objects to the Internet and used to control of those objects or remote monitoring. A health care monitoring system is necessary to constantly monitor the patient's physiological parameters. The main advantage of this system is that the results can be viewed at any time and place. The doctors can be notified by using mobile phones messages if patient health is abnormal. In this system, temperature sensor and pulse pressure sensor are used. The system can analyse the signal to detect normal or abnormal conditions. In the system, the internet of things (IoT) is becoming a major platform for many services and applications. The IoT is generally considered as connecting objects to the Internet. With tons of new healthcare technology start-ups, IOT is rapidly revolutionizing the healthcare industry. Here, IOT Based Patient Health Monitoring System using ESP8266 & Arduino is designed. The IOT platform used is ThingSpeak. ThingSpeak is an open-source Internet of Things (IOT) application and API to store and retrieve data from things using the HTTP protocol over the Internet or via a Local Area Network. It continuously monitors the pulse rate and surrounding temperature and updates them to an IOT platform. The Arduino Sketch running over the device implements the various functionalities like reading sensor data, converting them into strings, passing them to the IOT platform and displaying measured pulse rate and temperature can be monitored on mobile phones and monitoring systems.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016758 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IoT and Artificial Intelligence based Smart Electrical Load transmission, Distribution, Observing and Monitoring System using PLC and Webserver

(51) International classification :H02J0013000000, G05B0019050000, H02J0003140000, G06Q0050060000, H04N0007180000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Y Krishna Priya
Address of Applicant :Associate Professor Anantha Lakshmi Institute of Technology and Sciences Pin:515721 State: Andhra Pradesh Country: India ---------- ----------
2)Mr.Ashok Kumar Bandla
3)Dr.R.Senkamalavalli
4)Mr. Talari.Manohar
5)Mr. Ankit
6)Prof.Sangeeta Mahesh Borde
7)Ms. Meenakshi Mataray
8)Mr. Rambabu Kasukurthi
9)Dr. Vijayendra Singh Sankhla
10)Mr. Lalit Kumar
11)Mr.Ayan Banik
12)Mr.Raja Raju
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Y Krishna Priya
Address of Applicant :Associate Professor Anantha Lakshmi Institute of Technology and Sciences Pin:515721 State: Andhra Pradesh Country: India ---------- ----------
2)Mr.Ashok Kumar Bandla
Address of Applicant :Asscoiate Professor, Department of Electrical and Electronics Engineering, Ramachandra College of Engineering, NH-16 Bypass Road, Vatluru (V), Eluru, Pin: 534007 State: Andhra Pradesh Country: India ---------- ----------
3)Dr.R.Senkamalavalli
Address of Applicant :Associate professor East Point College of Engineering and Technology, Jnana Prabha,Virgo Nagar post, Bangalore. Pin: 560049 State: Karnataka Country: India ---------- ----------
4)Mr. Talari.Manohar
Address of Applicant :Assistant Professor Anantha Lakshmi Institute of Technology and Sciences Itikalapalli Near S.K.University Ananthapuramu Pin:515721 State: Andhra pradesh Country: India ---------- ----------
5)Mr. Ankit
Address of Applicant :Assistant Professor Chandigarh University, Gharuan , Mohali Punjab Pin: 160020 State: Punjab Country: India ---------- ----------
6)Prof.Sangeeta Mahesh Borde
Address of Applicant :Assistant Professor MIT Art's,Commerce & Science College,Alandi(D), Pune. Pin:412105 State: Maharashtra Country: India ---------- ----------
7)Ms. Meenakshi Mataray
Address of Applicant :Assistant Professor Inderprastha Engineering College, 63, Site IV, sahibabad, Ghaziabad, Uttar Pradesh Pin:201010 State: Uttar Pradesh Country: India ---------- ----------
8)Mr. Rambabu Kasukurthi
Address of Applicant :Associate Professor Aditya Engineering College, Surampalem Pin:533437 State: Andhra Pradesh Country: India ---------- ----------
9)Dr. Vijayendra Singh Sankhla
Address of Applicant :Associate Professor AITS, Udaipur Pin:313002 State: Rajasthan Country: India ---------- ----------
10)Mr. Lalit Kumar
Address of Applicant :PhD scholar MNNIT Allahabad, Allahabad Uttar Pradesh India PIN: 211004 State: Uttar Pradesh Country: India ---------- ----------
11)Mr.Ayan Banik
Address of Applicant :Student National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata Pin: 700106 State: West Bengal Country: India ---------- ----------
12)Mr.Raja Raju
Address of Applicant :Assistant Lecturer, St.Joseph University in Tanzania, P.O.Box: 11007. Country: Tanzania ---------- ----------

(57) Abstract :
IoT and Artificial Intelligence based Smart Electrical Load transmission, Distribution, Observing and Monitoring System using PLC and Webserver Abstract: Load balancing and monitoring of PLCs and web servers are key components of our project, which is now under construction. As our sector has grown, so has our need on electricity. As a result, power management has become a key concern throughout the world. To simplify matters further, only a negligible amount of energy is consumed. At the moment, the industrial sector's primary concern is when things do not go according to plan. As a result, the technique for developing the prototype is being developed. The prototype is one of the software prototypes displayed on the screen. If you wish to monitor and control your electrical loads in real time, a web-based PLC-based system is being deployed. If the first line is insufficient to meet demand, second lines will be used to make up the difference. As a result of the lack of missed production, we are not forced to close the company and go out of business. This way, we can quickly address the issue and correct the error, which will occur shortly. As a result, the procedure may be streamlined.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016805 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL METHOD FOR BATCH GRINDING OF LATERITE ORE USING STATISTICAL EXPERIMENTAL DESIGN

(51) International classification :B02C0025000000, C22B0003000000, C04B0040000000, C08F0120060000, C22B0003020000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Ch.Asha Immanuel Raju
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
2)Dr.Ch.Asha Kiran Raju
3)Dr.Ch.Asha Jyothi
4)Dr.M.Tukaram Bai
5)Ms.R. Kalyani Mahalakshmi
6)Ms.J.Anitha
7)Ms.L.Neelima Chandralekha
8)Dr.S.Chakri
9)Dr.Ch.V.Satya
10)Mrs.Ch. V. Naga Sowjanya
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Ch.Asha Immanuel Raju
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
2)Dr.Ch.Asha Kiran Raju
Address of Applicant :Post Doctoral Fellow (ICSSR), Department of Social Work, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
3)Dr.Ch.Asha Jyothi
Address of Applicant :Research Scholar, Department of Education, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
4)Dr.M.Tukaram Bai
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
5)Ms.R. Kalyani Mahalakshmi
Address of Applicant :Research Scholar, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
6)Ms.J.Anitha
Address of Applicant :Research Scholar, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
7)Ms.L.Neelima Chandralekha
Address of Applicant :Research Scholar, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
8)Dr.S.Chakri
Address of Applicant :Women Scientist DST (WOS-A), Centre for Biotechnology, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
9)Dr.Ch.V.Satya
Address of Applicant :Women Scientist DST (WOS-A), Centre for Biotechnology, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
10)Mrs.Ch. V. Naga Sowjanya
Address of Applicant :Assistant Professor (Contract), Department of Chemical Engineering, Sri Venkateswara University College of Engineering, S V University, Tirupati, Andhra Pradesh, India. Pin Code:517502 ---------- ----------

(57) Abstract :
[028] The present invention discloses a novel method for batch grinding of laterite ore using statistical experimental design. In the present invention, the objectives of grinding are to obtain the accurate grade of liberation in mineral processing. Increase the specific surface area of the valuable minerals for hydrometallurgical treatment, i.e., leaching. Grinding in mineral processing is to adjust the size of mineral particles to adapt to the optimum size for the successive separation processes. Determine the Power consumption per unit specific surface increases with time. How the size of the ball increases specific surface increases uniformly with the values of Bs. Power consumption is how influenced for all ball sizes for a particular amount of feed. Power consumption of grinding is depending on feed quantity and new specific surface generated.

No. of Pages : 17 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016807 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A novel composition for Antidiabetic tricyclic compounds and preparation method thereof

(51) International classification :A61K0045060000, C07D0417140000, C07C0062340000, C07D0417120000, A61K0031505000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr. Ratnakar Cherukupally
Address of Applicant :Associate Professor, Department of Pharmaceutical Chemistry, Guru Nanak Institutions Technical Campus - School of Pharmacy, Ibrahimpatnam, Hyderabad, Telangana, India, Pincode: 501506 ---------- ----------
2)Ms. Snehal Nagsen Chandanshive
3)Dr. Venugopal Muralidharan
4)Ms. K. Saraswathi
5)Mr. Vipul Malgonda Patil
6)Mr. Vinod Shivajirao Pattankude
7)Mr. E Jagadish Kumar
8)Mr. Pola Kranthi Kumar
9)Mrs. Galipelly Sunitha
10)Mr. Yagnambhatla Rajendra
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Ratnakar Cherukupally
Address of Applicant :Associate Professor, Department of Pharmaceutical Chemistry, Guru Nanak Institutions Technical Campus - School of Pharmacy, Ibrahimpatnam, Hyderabad, Telangana, India, Pincode: 501506 ---------- ----------
2)Ms. Snehal Nagsen Chandanshive
Address of Applicant :Near Gayatri Tatte Idli Hotel, Doddapet Cross, Kaipet, Davangere, Karnataka, India, Pincode: 577002 ---------- ----------
3)Dr. Venugopal Muralidharan
Address of Applicant :Associate Professor, Department of Pharmaceutical Chemistry, Vishnu Institute of Pharmaceutical Education and Research, Narsapur, Hyderabad, Telangana, India, Pincode: 502313 ---------- ----------
4)Ms. K. Saraswathi
Address of Applicant :Assistant Professor, Department of Pharmacology, Guru Nanak Institutions Technical Campus - School of Pharmacy, Ibrahimpatnam, Hyderabad, Telangana, India, Pincode: 501506 ---------- ----------
5)Mr. Vipul Malgonda Patil
Address of Applicant :Assistant Professor & PG Teacher, Department of Pharmaceutical Chemistry, Ashokrao Mane College of Pharmacy, Peth Vadgaon, Dist- Kolhapur, Maharashtra, India, Pincode: 416112 ---------- ----------
6)Mr. Vinod Shivajirao Pattankude
Address of Applicant :Assistant Professor, Department of Pharmacology, Womens College of Pharmacy, Peth Vadgaon, Dist- Kolhapur, Maharashtra, India, Pin 416112 ---------- ----------
7)Mr. E Jagadish Kumar
Address of Applicant :Assistant Professor, Department of Pharmacy Practice Chilkur Balaji College of Pharmacy, Moinabad, Ranga Reddy District, Telangana, India, Pincode: 500075 ---------- ----------
8)Mr. Pola Kranthi Kumar
Address of Applicant :Assistant Professor, Department of Pharmaceutics, Bhaskar Pharmacy College, Moinabad, RangaReddy, Telangana, India, Pincode: 501504 ---------- ----------
9)Mrs. Galipelly Sunitha
Address of Applicant :Research Scholar, Department of Botany, Kakatiya University, Warangal, Telangana, India, Pincode: 506009 ---------- ----------
10)Mr. Yagnambhatla Rajendra
Address of Applicant :Associate Professor, Department of Pharmaceutical Chemistry, MAK College of Pharmacy, Moinabad, Rangareddy, Telangana, India, Pincode: 501504 ---------- ----------

(57) Abstract :
Agonists of G-protein coupled receptor 40 (GPR40) include cyclopropane carboxylic acid-bicyclic ring tricyclic compounds, including pharmaceutically acceptable salts, which are useful therapeutic compounds, particularly in the treatment of Type 2 diabetes and conditions often associated with this disease, such as obesity and lipid disorders, such as mixed or diabetic dyslipidemia, hyperlipidemia, hyper cholesterol ism.

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016808 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A METHOD OF USING HYDROTROPES IN SOAP FLOTATION FOR HIGH RECOVERY FROM LOW GRADE ORES

(51) International classification :B03D0001020000, B03D0001002000, C11D0003340000, B03D0001008000, A61K0009190000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Ch.Asha Immanuel Raju
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
2)Dr.Ch.Asha Kiran Raju
3)Dr.Ch.Asha Jyothi
4)D.Vijaya Mitra
5)Dr.M.Tukaram Bai
6)Dr.N.V.R. Nagalakshmi
7)Ms.L.Neelima Chandralekha
8)Dr.S.Chakri
9)Dr.Ch.V.R.L.Gayatri
10)Ch.V.Naga Sowjanya
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Ch.Asha Immanuel Raju
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
2)Dr.Ch.Asha Kiran Raju
Address of Applicant :Post Doctoral Fellow (ICSSR), Department of Social Work, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
3)Dr.Ch.Asha Jyothi
Address of Applicant :Research Scholar, Department of Education, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530 003 ---------- ----------
4)D.Vijaya Mitra
Address of Applicant :Research Scholar, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
5)Dr.M.Tukaram Bai
Address of Applicant :Assistant Professor, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
6)Dr.N.V.R. Nagalakshmi
Address of Applicant :Assistant Professor, Department of Petroleum Engineering, GIET College of Engineering, Rajahmundry, Andhra Pradesh, India. Pin Code:533296 ---------- ----------
7)Ms.L.Neelima Chandralekha
Address of Applicant :Research Scholar, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
8)Dr.S.Chakri
Address of Applicant :Women Scientist DST (WOS-A), Centre for Biotechnology, Department of Chemical Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003 ---------- ----------
9)Dr.Ch.V.R.L.Gayatri
Address of Applicant :Assistant Professor, Department of Science & Humanities, Lendi Institute of Engineering & Technology, Vizag, Vizianagaram Road, Jonnada, Denkada Mandal, Andhra Pradesh, India. Pin Code:535005 ---------- ----------
10)Ch.V.Naga Sowjanya
Address of Applicant :Assistant Professor (Contract), Department of Chemical Engineering, Sri Venkateswara University College of Engineering, S V University, Tirupati, Andhra Pradesh, India. Pin Code: 517502 ---------- ----------

(57) Abstract :
[021] The present invention discloses a method of using Hydrotropes in soap flotation for high recovery from low grade ores. In the present invention, the method is used to process very small sized ores flotation and to achieve higher recoveries with reduced usage of reagents in flotation hydrotropes are helpful. A hydrotrope is an amphiphilic compound that solubilises hydrophobic compounds in aqueous solution. Hydrotropes is used as promoters in soap flotation. Addition of hydrotropic to soap collector enhances collector efficiency and gives the higher recoveries along with reduced dosage of collectors. Hydrotropes are efficient soluibilizers and can influence the micelle and micro emulsions. Hydrotropes exhibit the aggregation behavior above minimum hydrotropic solution (MHS). Further, the aforesaid MHC the solubility of the organic compound in aqueous phase increases significantly.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2022

(21) Application No.202241016809 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Hybrid and Electric vehicles charging at running time vehicle

(51) International classification :H02J0003380000, B60L0053630000, B60L0053300000, B60L0053100000, B60L0053800000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Ramesh Marpu
Address of Applicant :Professor & HoD, Department of Electrical And Electronics Engineering, Vaageswari College of Engineering, Karimnagar, Neae Lmd Police Station, Thimapur, Karimnagar, Telangana - 505527 ---------- ----------
2)Dr. Shailesh Kumar Dewangan
3)Mr. Kaleeswaran. J
4)Mr. Stalin Durai
5)Ms. Nandhakumari. J
6)Dr. J.Joshua Gnana Sekaran
7)Dr. Kodanda Rama Rao Chebattina
8)Dr. J. Sadhik Basha
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Ramesh Marpu
Address of Applicant :Professor & HoD, Department of Electrical And Electronics Engineering, Vaageswari College of Engineering, Karimnagar, Neae Lmd Police Station, Thimapur, Karimnagar, Telangana - 505527 ---------- ----------
2)Dr. Shailesh Kumar Dewangan
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Chouksey Engineering College, Lal Khadan Masturi Road Bilaspur, Chhattisgarh ---------- ----------
3)Mr. Kaleeswaran. J
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Kgisl Institute of Technology, Kgisl Campus, Saravanampatti, Coimbatore- 641035 ---------- ----------
4)Mr. Stalin Durai
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Kgisl Institute of Technology, Kgisl Campus, Saravanampatti, Coimbatore- 641035 ---------- ----------
5)Ms. Nandhakumari. J
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Kgisl Institute of Technology, Kgisl Campus, Saravanampatti, Coimbatore- 641035 ---------- ----------
6)Dr. J.Joshua Gnana Sekaran
Address of Applicant :Professor in Mechanical Engineering and Principal, CSI College of Engineering, Ooty. 643 215 The Nilgiris ---------- ----------
7)Dr. Kodanda Rama Rao Chebattina
Address of Applicant :Assistant Professor, Dept of Mechanical Engineering, GITAM(Deemed to be University), Visakhapatnam Campus ---------- ----------
8)Dr. J. Sadhik Basha
Address of Applicant :Professor, Department Process Engineering, International Maritime College Oman (IMCO) PO Box No. : 532, Postal Code : 322 Falaj Al Qabail, Sohar, Sultanate Of Oman ---------- ----------

(57) Abstract :
As It is essential that charging stations be constructed properly to enable rapid charging rates for electric cars (EVs) and plug-in hybrid electric vehicles (PHEVs) to acquire popularity. This would place an increased burden on the existing grid, raising the cost of charging as a consequence. One alternative for improving the performance of charging stations is to use on-site renewable energy sources such as photovoltaic (PV) power in addition to the regular grid, as one example. A photovoltaic (PV) source linked to the grid supplies the EV load in this thesis. However, PVs are renowned for being unreliable because they are dependent on geographic and climatic variables. Combined with PV in a grid-connected system, battery storage systems (BSS) enable a stable charging station operation that compensates for the intermittent nature of PV generation.

No. of Pages : 23 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202241016913 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LEAF DISEASES AND INFECTION PREDICTION OF LEVELS IN COMBINATION WITH PROCESS IDENTITY USING DEEP LEARNINGS TECHNIQUES

(51) International classification	:G06N0003040000, G06K0009620000, G06N0003080000, G06K0009000000, G16B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GANGADEVI GANESAN
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------
2)C JAYAKUMAR
3)R. SUBHASHINI
4)G. ANITHA
5)P.N. PERIYASAMY
6)RAJESH KUMAR K
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)GANGADEVI GANESAN
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------
2)C JAYAKUMAR
Address of Applicant :PROFESSOR DEPARTMENT OF COMPUTER SCIENCE, SRI VENKATESWARA COLLEGE OF ENGINEERING, POST BAG NO.1, PENNALUR VILLAGE CHENNAI- BANGLURU HIGH ROAD, CHENNAI, TAMILNADU, INDIA, 602117 ---------- ----------
3)R. SUBHASHINI
Address of Applicant :ASSOCIATE PROFESSOR DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------
4)G. ANITHA
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------
5)P.N. PERIYASAMY
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------
6)RAJESH KUMAR K
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, MEENAKSHI COLLEGE OF ENGINEERING, NO12 VEMBULIAMMAN STREET, WEST KK NAGAR CHENNAI, TAMIL NADU, INDIA, 600078 ---------- ----------

(57) Abstract :
In the cutting-edge period, profqiind learning procedures have arisen as incredible assets in picture acknowledgment. Convolutional Neural Networks, one of the profound learning instruments, have achieved a great result around here. Applications, for example, distinguishing objects, faces, bones, transcribed digits, and traffic signs connote the significance of Convolutional Neural Networks in reality. The viability of Convolutional Neural Networks in picture acknowledgment spurs the scientists to expand its applications in the field of agribusiness for acknowledgment of plant species, yield the executives, weed identification, soil, and water the board, natural product counting, sicknesses, and irritation discovery, assessing the supplement status of plants, and substantially more. The; accessibility of voluminous exploration works in applying profound learning models in agribusiness prompts trouble in choosing a reasonable model as per the sort of dataset and test climate. In this original copy, the creators present a study of the current writing in applying profound Convolutional Neural Networks to anticipate plant sicknesses from leaf pictures. This original copy presents a commendable examination of the pre-handling methods, Convolutional Neural Network models, systems, and improvement strategies applied to recognize and characterize plant sicknesses utilizing leaf pictures as an informational collection. This original copy likewise presents a review of the datasets and execution measurements used to assess the viability of models. The composition features the benefits and drawbacks of various strategies and models proposed in the current writing. This overview will facilitate the undertaking of scientists working in the field of applying profound learning procedures for the ID and arrangement of plant leaf sicknesses.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202241016914 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTRUSION DETECTION SYSTEM ANALYTICAL APPROACH USING BIG DATA WITH DEEP LEARNING TECHNIQUES

(51) International classification :H04L0029060000, G06N0003040000, G06N0003080000, G06K0009620000, G10L0015160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1) SATISHKUMAR HARSOOR
Address of Applicant :ASSISTANT PROFESSOR, PDA COLLEGE OF ENGINEERING, AIWAN-E-SHAHI AREA, SHAMBHOGNLLI, KALABURAGI, KARNATAKA, INDIA, 585102 ---------- ----------
2)Dr. P. MURUGESWARI
3)M. JHANSI RANI
4)Dr. A. KALAIVANI
5)Dr. R. THIAGARAJAN
6)G. RANJITH
7)K.J. BENJAMIN ANDRO JEROME
8)Dr. SUBBURAJ T.
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SATISHKUMAR HARSOOR
Address of Applicant :ASSISTANT PROFESSOR, PDA COLLEGE OF ENGINEERING, AIWAN-E-SHAHI AREA, SHAMBHOGNLLI, KALABURAGI, KARNATAKA, INDIA, 585102 ---------- ----------
2)Dr. P. MURUGESWARI
Address of Applicant :PROFESSOR CSE(CYBER SECURITY), KARPAGAM COLLEGE OF ENGINEERING, MYLERIPALAYAM VILLAGE, OTHAKKAL MANDAPAM POST, COIMBATORE, TAMILNADU, INDIA, 641032 ---------- ----------
3)M. JHANSI RANI
Address of Applicant :RESEARCH SCHOLAR, LOVELY PROFESSIONAL UNIVERSITY, ALANDHAR-DELHI, GRAND TRUNK RD, PHAGWARA, PUNJAB, INDIA, 144001 ---------- ----------
4)Dr. A. KALAIVANI
Address of Applicant :ASSISTANT PROFESSOR NEHRU ARTS AND SCIENCE COLLEGE(AUTONOMOUS), NEHRU GARDENS, THIRUMALAYAMPALAYAM, COIMBATORE, INDIA, 641105 ---------- ----------
5)Dr. R. THIAGARAJAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF INFORMATION TECHNOLOGY, PRATHYUSHA ENGINEERING COLLEGE, ARANVOYALKUPPAM, CHENNAI, TAMILNADU, INDIA, 602025 ---------- ----------
6)G. RANJITH
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF COMPUTER SCIENCE ENGINEERING, VSB ENGINEERING COLLEGE, 67, KOVAI MAIN ROAD, KARUDAYAMPALAYAM, KARUR, TAMILNADU, INDIA, 639111 ---------- ----------
7)K.J. BENJAMIN ANDRO JEROME
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING, R V S EDUCATIONAL TRUST'S GROUP OF INSTITUTIONS, OLD KARUR ROAD, RVS NAGAR, DINDIGUL, TAMILNADU, INDIA, 624005. ---------- ----------
8)Dr. SUBBURAJ T.
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MCA, RAJARAJESWARI COLLEGE OF ENGINEERING, 14, RAMOHALLI CROSS, KUMBALGODU, MYSORE RD, BANGALORE, KARNATAKA, INDIA, 560074 ---------- ----------

(57) Abstract :
An intrusion detection system that employs a variety .of system tasks and log files that are being generated on the host machine in order to detect HIDS refers to high-intensity distributed denial-of-service attacks. In order to enhance the capacity of intrusion detection systems, Big Data with Deep Learning Methods are combined. Deep Neural Network (DNN) and highly proficient approaches, Random Forest as well as Gradient Boosting Tree, are utilised to categorise internet traffic datasets. Deep learning algorithms are widely used to develop an intrusion detection system (IDS) task of automatically recognising and characterizing attacks at the host addressing performance in real time. Researchers utilise a homogeneity measure to analyse characteristics in order to identify its most productivity and organizational from dataset. As according extensive experimental research, DNNs outperform classical machine learning classifiers in terms of performance.The findings shows that DNN has a good precision for different classifiers detection on datasets with accuracy rate for multi-class categorization. Employing Apache Flink to simplify the process and handling the streaming capabilities. Keywords: Deep Neural Network (DNN), intrusion detection system, Apache Flink, Denial- of-service attacks

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2022

(21) Application No.202241017033 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR ANALYSING SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT) IMAGES AND A METHOD THEREOF

(51) International classification	:G06T0015080000, A61B0006030000, G06K0009320000, G06T0011000000, G06T0007000000
(86) International Application No Filing Date	:PCT// / :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SRM Institute of Science and Technology
Address of Applicant :Kattankulathur, Chennai-603203, Tamil Nadu, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)S. Anita
Address of Applicant :St. Anne's College of Engineering and Technology, Anguchettypalayam, Panruti, Cuddalore Dt 607106, Tamil Nadu, India ---------- ----------
2)PRIYA P. Aruna
Address of Applicant :Department of ECE, SRM Institute of Science and Technology, Kattankulathur, Chennai 603203, Tamil Nadu, India ---------- ----------

(57) Abstract :
ABSTRACT A SYSTEM FOR ANALYSING SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT) IMAGES AND A METHOD THEREOF The present invention relates to the field of image processing and discloses a system (100) and method (200) for analysing SPECT images. The system (100) includes an input module (104) to receive at least one 3D SPECT image of a subject; a slice selector module (106) to select a pre-determined number of volume rendering image slices from 91 2D transaxial image slices of the received SPECT image; a processing module (108) to pre-process and segment the received slices based on a pre-determined set of processing rules stored in a repository (102), to identify volume of interest (VOI) in the image slices; an extractor module (110) to extract volume of pixels from the VOI of the volume rendering image slices; a determining module (112) to determine a degree of abnormality in the condition of the subject and update a dataset stored in the repository (102) with received voxels and outcome value.

No. of Pages : 28 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2022

(21) Application No.202241017475 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Extracting Antenna Specifications in Scattering Environment using Metasurface Cloak for Microwave Applications

(51) International classification :H01Q0001520000, H01Q0001240000, H01Q0015000000, H01Q0001380000, H01Q0001480000
(86) International Application No :PCT// /
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)KONERU LAKSHMAIAH EDUCATION FOUNDATION
Address of Applicant :KL IPFC, KLEF (Deemed To Be University), Vaddeswaram, Guntur A. P,INDIA, 522502 ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)K. Srilatha
Address of Applicant :KLEF (Deemed To Be University), Vaddeswaram, Guntur, A. P INDIA, 522302 ---------- ----------
2)Dr B.T.P. Madhav
Address of Applicant :KLEF (Deemed To Be University) Vaddeswaram, Guntur, A.P, INDIA,522302 ---------- ----------
3)D. Sai Shyam Ashwin
Address of Applicant :KLEF (Deemed To Be University) Vaddeswaram, Guntur, A.P, INDIA, 522302 ---------- ----------
4)M. Sunand Kumar Goud
Address of Applicant :KLEF (Deemed To Be University) Vaddeswaram, Guntur, A.P, INDIA, 522302 ---------- ----------
5)V. Srihari Sai Neeraj
Address of Applicant :KLEF (Deemed To Be University) ,Vaddeswaram, Guntur, A.P, INDIA ,522302 ---------- ----------
6)M.C. Rao
Address of Applicant :Andhra Loyola College, Vijayawada-8, Vijayawada, A.P, INDIA ,520008 ---------- ----------
7)Suimit Kumar Behera
Address of Applicant :KLEF (Deemed To Be University) ,Vaddeswaram, Guntur, A.P, INDIA ,522302 ---------- ----------

(57) Abstract :
In this invention, we apply a metasurface cloaking method to decrease the mutual coupling between the two near field antennas. By introducing the metasurface with O-shaped unit cells and wrapping that metastructure over the antennas to increase the original bandwidth of the antennas and also reduce the mutual coupling. Antennas operate with two different frequencies improves the reduction in S-parameters and restoration of original radiation patterns. Later the proposed metasurface cloaked antenna is designed as microstrip monopole antenna with the metasurface cloak integrated. The results obtained are high efficiency, good return loss, low mutual coupling and restored radiation patterns. This technology helps in densely spaced environment and antenna arrays in different operating bands.

No. of Pages : 22 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2022

(21) Application No.202241017480 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Real Time Agriculture Field Monitoring System Using IOT

(51) International classification :A01G0025160000, H04L0029080000, A01C0023040000, H04L0029060000, A01G0025020000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr. S.Sivasakthi
Address of Applicant :Professor, Head in Electrical and Electronics Engineering, Krishnasamy College of Engineering & Technology, Cuddalore. ---------- ----------
2)Dr. Syed Azahad
3)Dr. I.Kathir
4)Anand Arvind Maha
5)Dr. E.Syed Mohamed
6)Dr. J.Senthil Murugan
7)Akilan S S
8)R B R Prakash
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. S.Sivasakthi
Address of Applicant :Professor, Head in Electrical and Electronics Engineering, Krishnasamy College of Engineering & Technology, Cuddalore. ---------- ----------
2)Dr. Syed Azahad
Address of Applicant :Associate Professor / CSE, Methodist College of Engineering and Technology, King Koti, Abids, Hyderabad-500001, ---------- ----------
3)Dr. I.Kathir
Address of Applicant :Professor / EEE, V.S.B. Engineering College, Karur. ---------- ----------
4)Anand Arvind Maha
Address of Applicant :I/c HOD /Computer Science Engineering., St. John College of Engineering and Management, Vevor-Manor road, Palghar East. ---------- ----------
5)Dr. E.Syed Mohamed
Address of Applicant :Professor / CSE, BSA Crescent Institute of Science and Technology, GST Road, Vandallur, Chennai 48. ---------- ----------
6)Dr. J.Senthil Murugan
Address of Applicant :Associate Professor / CSE, Vel Tech High Tech Dr. Rangarajan Dr.Sakunthala Engineering College, Avadi, Chennai. ---------- ----------
7)Akilan S S
Address of Applicant :Assistant Professor (Sr.grade) / MCA, Mepco schlenk Engineering College (Autonomous), Mepco nagar, Mepco schlenk engineering college post, Sivakasi, Tamilnadu, India-626005. ---------- ----------
8)R B R Prakash
Address of Applicant :Associate Professor / EEE, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Tadepalli, Guntur, AP, 522503. ---------- ----------

(57) Abstract :
A cloud-based intelligent irrigation system is the subject of the invention. Irrigation devices, sensors, and an Internet of Things terminal management controller are connected to the Internet of Things terminal management master controller with enabled Artificial Intelligence (AI). The Internet of Things terminal management controller is connected to the intelligent irrigation cloud data center via a wireless network. A user logs in to the intelligent irrigation cloud data center. Cloud computing, the Internet of Things (IoT), big data, mobile application, and artificial intelligence technology are all employed in the system, which is simple, easy, and convenient; the timeliness is good, and network convenience is easy; the reliability is high; the transmission rate is fast, and an advanced Internet of Things intelligent irrigation system based on cloud computing is provided for the application and promotion.

No. of Pages : 24 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2022

(21) Application No.202241017508 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMPACT THREE-IN-ONE MOBILE PHONE STAND

(51) International classification	:H04M0001040000, F16M0011100000, F16M0013020000, F16M0011380000, F16M0011160000
(86) International Application No Filing Date	:PCT// / :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Vemula Lakshmi Narayana
Address of Applicant :V. Lakshmi Narayana Door No. 16-667-3, Nandalapadu, Tadipatri – 515 411, Anantapur Dt, Andhra Pradesh, INDIA. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vemula Lakshmi Narayana
Address of Applicant :V. Lakshmi Narayana Door No. 16-667-3, Nandalapadu, Tadipatri – 515 411, Anantapur Dt, Andhra Pradesh, INDIA. ---------- ----------

(57) Abstract :
A compact three-in-one mobile phone stand 10, comprising a phone stand, a camera stand and a sound amplifier, where as the phone stand, camera stand and sound amplifier are built integratedly into one single device. The stand 10 can hold a mobile phone as vertical manner one posture and horizontal manner four postures to display the mobile phone screen conveniently to a user. The stand 10 is compatible to hold a mobile phone conveniently to shoot photos and videos in both horizontal and vertical manner at different angles and directions, the invention 10 having an innovative sound amplification method to increase the sound and sound clarity of a mobile phone placed in the stand 10 without using the electrical power. The stand 10 is small in size for easy travel and can attach to a wall to hold a phone safely to recharge nearer to an electrical board.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2022

(21) Application No.202241017590 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Parallel Processed Bit Sliced Matrix Codes

(51) International classification :H04L0001000000, G06F0011100000, H03M0013000000, G06F0007506000, H04N0019112000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Ms. Neelima K
Address of Applicant :Research Scholar Department of Electronics and Communication Engineering JNTUA College of Engineering JNTUA, Ananthapuramu, Andhra Pradesh 515002, India ---------- ----------
2)Dr. C. Subhas
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ms. Neelima K
Address of Applicant :Research Scholar Department of Electronics and Communication Engineering JNTUA College of Engineering JNTUA, Ananthapuramu, Andhra Pradesh 515002, India ---------- ----------
2)Dr. C. Subhas
Address of Applicant :Professor and Head of the Department, Vice-Principal Department of Electronics and Communication Engineering JNTUA College of Engineering JNTUA Kalikiri, Andhra Pradesh 517234, India ---------- ----------

(57) Abstract :
Submicron-based memory is notoriously unreliable because of the possibility of data corruption. Data that has to be processed quickly may be processed using matrix codes. The low coding rate and excessive bit overhead are still a problem. Two parallel processed bit slice matrix codes of syndrome length N/2 for data length N are developed in this proposed idea. For the error correction step, they make advantage of the partial encoder reuse approach and parallel processing capacity. For 28nm Zynq 7000 series FPGA (XC7Z100-1FFG1156) implementation, Xilinx ISE 14.5 tools and Verilog HDL modelling were used. Code rates, redundancy bits, reliability, and power efficiency are all higher for these new codes than for the current ones. It is possible to increase the performance of the programmes by 20.21 percent by using parallel processing. The 8 x 8 PPMC code has the lowest bit overhead of 25% and a superior coding rate of 80% of the suggested codes.

No. of Pages : 19 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2022

(21) Application No.202241017591 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADVANCED AI BASED AUTOMATION TECHNOLOGY IN MANUFACTURING AND SERVICE INDUSTRIES

(51) International classification :G06Q0030060000, G06N0020000000, G06Q0010060000, G06N0003020000, G06N0003040000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Harshwardhan Chandrakant Pandit
Address of Applicant :Research Scholar, Department of Mechanical Engineering, KLS Gogte Institute of Technology, Belagavi, Karnataka. ---------- ----------
2)Dr. Navneet Kumar Agrawal
3)Dr. Nimish H. Vasoya
4)Mr. D. Saravanan
5)Dr.G.Arunkumar
6)Dr. Shashi Kant Gupta
7)Mr. D.Prabhu
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Harshwardhan Chandrakant Pandit
Address of Applicant :Research Scholar, Department of Mechanical Engineering, KLS Gogte Institute of Technology, Belagavi, Karnataka. ---------- ----------
2)Dr. Navneet Kumar Agrawal
Address of Applicant :Associate Professor, College of Technology and Engineering, MPUAT Udaipur. ---------- ----------
3)Dr. Nimish H. Vasoya
Address of Applicant :Associate Professor, Department of Balbhavan, Children's University, Gandhinagar. ---------- ----------
4)Mr. D. Saravanan
Address of Applicant :Associate Professor, Department of CSE, IFET College of Engineering, Villupuram, 605108. ---------- ----------
5)Dr.G.Arunkumar
Address of Applicant :Associate professor, Department of Computer Science & Engineering, Madanapalle Institute of Technology & Science, Madanapalle, Chittoor District. ---------- ----------
6)Dr. Shashi Kant Gupta
Address of Applicant :Department of CSE, Integral University, Lucknow, UP, India. ---------- ----------
7)Mr. D.Prabhu
Address of Applicant :Assistant Professor, Department of Information Technology, Loyola Institute of Technology, Palanchur, Chennai-600123. ---------- ----------

(57) Abstract :
It is generally understood that the present invention relates to the fields of manufacturing/ Engineering intelligence, expert system-neural network/expert system technology for use in manufacturing and design & engineering applications, as well as to the fields of methods and systems for providing and implementing professional solutions. A more specific aspect of the present invention relates to the field of applying sophisticated algorithms and interview technologies that allow a user to conceive and design products and processes, and more specifically, to the field of methods and systems for delivering and implementing electronic commerce artificial intelligence-based, neural network-based, and expert system-based engineering and manufacturing solutions that are vertically integrated from concept to completion, and that is based on electronic commerce artificial intelligence, neural network-based, and expert system-based.

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017743 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A REAL-TIME SAFETY DEVICE

(51) International classification :G08B0021020000, H04W0004900000, H04W0004029000, A61B0005000000, A61B0005024000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)PERIYAR CENTENARY POLYTECHNIC COLLEGE
Address of Applicant :PERIYAR NAGAR, VALLAM, THANJAVUR - 613403 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)G. ROJA
Address of Applicant :PERIYAR CENTENARY POLYTECHNIC COLLEGE, VALLAM, THANJAVUR – 613 403 ---------- ----------
2)S.MADHUMITHA
Address of Applicant :PERIYAR CENTENARY POLYTECHNIC COLLEGE, VALLAM, THANJAVUR – 613 403 ---------- ----------
3)VAISHNAVI.G
Address of Applicant :PERIYAR CENTENARY POLYTECHNIC COLLEGE, VALLAM, THANJAVUR – 613 403 ---------- ----------

(57) Abstract :
A REAL-TIME SAFETY DEVICE A real-time safety device relates to the wearable device is incorporated with sensors to detect an emergency situation by monitoring the health condition of the user. The application gathers geographical location co-ordinates of the wearable device and shares the location information with other mobile device users in case of emergency using IoT

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017774 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL PARADIGM FOR E HEALTH CARE SYSTEM USING CLOUD COMPUTING

(51) International classification	:H04L0029080000, G06Q0050220000, G06N0020000000, G16H0010600000, G16H0040200000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Sheetalrani R Kawale
Address of Applicant :Assistant Professor, Computer Science Department, Karnataka State Akkamahadevi Women's University, Vijayapura, Vijayapura, Karnataka – 586105 ---------- ----------
2)Mr Avinash K. Ikhar
3)Mr. Shyam D. Bawankar
4)Mr. Shailesh Manohar Sakhare
5)Mrs. Jayashree M Kudari
6)Dr. AN.Sigappi
7)Mr. S.Premkumar
8)Dr. Mohammad Faisal Siddiqui
9)Mr. Mallesha M
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sheetalrani R Kawale
Address of Applicant :Assistant Professor, Computer Science Department, Karnataka State Akkamahadevi Women's University, Vijayapura, Vijayapura, Karnataka – 586105 ---------- ----------
2)Mr Avinash K. Ikhar
Address of Applicant :Assistant Professor, Electronic and Telecommunications Department, J D College of Engineering and Management, Nagpur, Maharashtra – 441501 ---------- ----------
3)Mr. Shyam D. Bawankar
Address of Applicant :Assistant Professor, Electronic and Telecommunications Department, J D College of Engineering and Management, Nagpur, Maharashtra – 441501 ---------- ----------
4)Mr. Shailesh Manohar Sakhare
Address of Applicant :Assistant Professor, Electronic and Telecommunications Department, J D College of Engineering and Management, Nagpur, Maharashtra – 441501 ---------- ----------
5)Mrs. Jayashree M Kudari
Address of Applicant :Associate Professor, CS And IT Department, Jain Deemed to be university, Bangalore, Karnataka – 560056 ---------- ----------
6)Dr. AN.Sigappi
Address of Applicant :Professor, Department of Computer Science and Engineering, Annamalai University, Annamalainagar, Chidambaram, Tamilnadu – 608002 ---------- ----------
7)Mr. S.Premkumar
Address of Applicant :Research Scholar, Department of Computer Science and Engineering, Annamalai University, Annamalainagar, Chidambaram, Tamilnadu – 608002 ---------- ----------
8)Dr. Mohammad Faisal Siddiqui
Address of Applicant :Associate Professor, Zoology Department, KVSCOS, Swami Vivekanad Subharti University, Meerut, Uttar Pradesh – 250005 ---------- ----------
9)Mr. Mallesha M
Address of Applicant :Assistant Professor, Department of Computer Science & Engineering, Gopalan College of Engineering and Management, Bengaluru, Karnataka – 560048 ---------- ----------

(57) Abstract :
Cloud-based healthcare computers have revolutionized the face of healthcare in numerous ways. The significant benefits of cloud computing in healthcare are scalability of the desired service and the possibility to upscale or downsize the data storage, cooperating Artificial Intelligence (AI) and machine learning. An improved healthcare system is essential for every country's economic, technical, and social progress. When a patient needs constant monitoring, expanding the health care system entails a vast number of workers. The health care system now has an efficient and effective answer thanks to the power of information and communication technologies. The state of a patient may be tracked and regulated remotely using the Internet of Things (IoT). Cloud computing and web services are used in this research to demonstrate an e-health care system. Cloud computing has made it feasible to monitor and control from afar. It updates patient measurements automatically and delivers email alerts through SMTP (Simple Mail Transfer Protocol).

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017778 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYNTHESIS OF NANO PHASE CHANGE MATERIAL FOR SOLAR DESALINATION

(51) International classification :C02F0001140000, C09K0005060000, B01D0001000000, F28D0020020000, B01J0031220000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)ACADEMY OF MARITIME EDUCATION AND TRAINING (AMET) DEEMED TO BE UNIVERSITY
Address of Applicant :135, Kanathur, East coast road, Chennai ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)T. SASILATHA
Address of Applicant :Department of Electrical and Electronic Engineering , Academy of Maritime Education and Training 135, Kannatur, East coast road, Chennai - 603112 ---------- ----------
2)G.THIRUVASAGAM
Address of Applicant :Academy of Maritime Education and Training 135, Kanathur, East coast road, Chennai - 603112 ---------- ----------
3)R.SRINIVASAN
Address of Applicant :Member Secretary, Tamil Nadu State Council for Science and Technology, Govt. of Tamil Nadu, DOTE Campus, Sardar Patel Road Chennai - 600025 ---------- ----------
4)K.MANIKANDAN
Address of Applicant :Department of Electrical and Electronic Engineering , Academy of Maritime Education and Training 135 Kannatur, East coast road, Chennai- 603112 ---------- ----------
5)J PADMAPRIYA
Address of Applicant :Department of Electrical and Electronic Engineering , Academy of Maritime Education and Training 135, Kanathur, East coast road, Chennai- 603112 ---------- ----------
6)R.KARTHICKMANOJ
Address of Applicant :Department of Electrical and Electronic Engineering , Academy of Maritime Education and Training 135, Kanathur, East coast road, Chennai - 603112 ---------- ----------
7)S. Priya
Address of Applicant :Department of Electrical and Electronic Engineering , Academy of Maritime Education and Training 135, Kanathur, East coast road, Chennai - 603112 ---------- ----------

(57) Abstract :
ABSTRACT Synthesis of nano phase change material for solar desalination comprising coating basin with nano phase change material 4, synthesizing polyurethere foam, coating the prepared nano phase change material to the said inner surface and covering the material with double slope solar glass 3 covering. Desalination of sea water using solar still will be a promising solution for the water scarcity. Utilization of nano phase change materials in the desalination technologies enhances the thermal conductivity by storing latent heat and paves way for enhancing the productivity through a costeffective solution.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017800 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DETECTION OF BEETLES IN COCONUT GROVE

(51) International classification :A01K0067033000, A01M0001100000, A01N0045000000, A61K0035630000, A01G0007060000
(86) International Application No :PCT// /
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr.A.Venkatesh
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi ---------- ----------
2)Mrs.V.Karpagam
3)Mr.G.Karthikeyan
4)Mr.A.Maideen Abdhulkader Jeylani
5)Mr. P.Kathirvel
6)Dr.K.Vijayakumar
7)Dr.K.Rameshkumar
8)Mr.T.Gowtham
9)Mr.P.E.Kamalakkannan
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. P.Kathirvel
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi. ---------- ----------
2)Dr.K.Vijayakumar
Address of Applicant :Associate Professor and Head, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi. ---------- ----------
3)Dr.K.Rameshkumar
Address of Applicant :Assistant Professor, Dept. of Electrical and Electronics Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi. ---------- ----------
4)Mr.T.Gowtham
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi. ---------- ----------
5)Mr.P.E.Kamalakkannan
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi ---------- ----------
6)Mr.A.Venkatesh
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi ---------- ----------
7)Mrs.V.Karpagam
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi ---------- ----------
8)Mr.G.Karthikeyan
Address of Applicant :Assistant Professor, Dept. of Electronics and Instrumentation Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi ---------- ----------
9)Mr.A.Maideen Abdhulkader Jeylani
Address of Applicant :Sree Sakthi Engineering College Bettathapuram Karamadai Coimbatore ---------- ----------

(57) Abstract :
In the biggest threat for coconut trees are the destruction caused by the beetles which result in huge reduction of agricultural products. Normally trees between 12 to 13 years of age are more susceptible to such infestations. The female beetles drill a small hole in the soft tissues and lay their eggs which hatch in the next 2 -3 days, and grubs start tunneling to the live tissues of the tree. Being an internal feeder exit holes are tunneled only at the time of pupation and the presence of the pest cannot be detected at an early stage. The present method of detection is possible only after 35% of damage caused to the trees where controlling the pests will be difficult and the annual yield drops drastically. Here by using the acoustic sensors we aim to control the pest at an earlier stage minimizing the damage to the crops. This system aims in detecting the presence of the larvae at the beginning stages of tunneling the tree. The grub stage of the beetle's chew and cut the soft tissues of the girth by which the tissues get strained and it gives out sound waves at a frequency higher than human audible level.

No. of Pages : 5 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017851 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SOLAR AIR COOLER

(51) International classification :H02J0007350000, F24F0005000000, H02J0007040000, F24F0011840000, F24F0110100000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)CMR College of Engineering & Technology,
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
2)B.Teja Sri
3)A.Rishika
4)D.Venu
5)A,Sai kiran
6)A.Ravi kiran
7)M.Deepika
8)M.Vedachary
9)N. Chandrasekhar Azad
10)Kayyam Sathish
11)Abdul Subhani Shaik
12)Dr. K Suresh
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)B.Teja Sri
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
2)A.Rishika
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
3)D.Venu
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
4)A,Sai kiran
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
5)A.Ravi kiran
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
6)M.Deepika
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
7)M.Vedachary
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
8)N. Chandrasekhar Azad
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
9)Kayyam Sathish
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
10)Abdul Subhani Shaik
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
11)Dr. K Suresh
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------

(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards a solar air cooler. The solar air cooler comprising: a first processing device with a battery operably coupled with a solar panel configured with a solar charge controller and a display unit, whereby the solar panel and the solar charge controller configured to use solar energy to generate DC power, the battery configured to store the DC power and an inverter configured to convert the DC power into AC power; the inverter connected to an air conditioner blower to produce air movement to space that is being conditioned; the display unit operably coupled to a plurality of temperature sensors, whereby the plurality of temperature sensors configured to gather temperature parameter in surrounding environment and adjust speed of a cooler fan accordingly; and a water sump surrounding the air cooler to provide hydrated cool air via the air conditioner blower. FIG.1

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017860 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL PROCESS FOR THE PREPARATION OF SELINEXOR

(51) International classification :C07D0403120000, A61P0035000000, A61K0031497000, C07D0307790000, C07D0405040000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Natco Pharma Limited
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)GUTALA PHANEENDRA
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
2)KASA SRINIVASU
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
3)SIRIGIREDDY BALAKRISHNA REDDY
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
4)RAMESH DANDALA
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
5)MUDDASANI PULLA REDDY
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------
6)NANNAPANENI VENKAIAH CHOWDARY
Address of Applicant :Natco House, Road No.2 Banjara Hills, Hyderabad. ---------- ----------

(57) Abstract :
ABSTRACT The present invention provides a novel process for the preparation of Selinexor of Formula-(I) using novel intermediate compounds and it’s process thereof.

No. of Pages : 34 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017965 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Cost managing using digital technology

(51) International classification :G06Q0010060000, G06Q0040000000, G06Q0030020000, G06Q0099000000, G06F0016245700
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr. T. Rubini
Address of Applicant :Assistant Professor , B. Com, Dharmamurthy Rao Bahadur Calavala Cunnan Chetty's Hindu College , Chennai ---------- ----------
2)Dr. V.Kannan
3)Dr. Vikas Tyagi
4)Mrs. Janani S
5)Mrs. Raynukaazhakarsamy
6)Dr Dileep Kumar Singh
7)Dr. Ashish Gupta
8)Dr Rishi P Shukla
9)Mr. Anil Kumar Bhuyan
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. T. Rubini
Address of Applicant :Assistant Professor , B. Com, Dharmamurthy Rao Bahadur Calavala Cunnan Chetty's Hindu College , Chennai ---------- ----------
2)Dr. V.Kannan
Address of Applicant :Managing director, CLDC Research and Development No.997, Mettupalayam Road, Near X-Cut Signal,R.S.Puram, Coimbatore-641002 ---------- ----------
3)Dr. Vikas Tyagi
Address of Applicant :Professor, School of business studies, University Himgiri zee university, Dehradun ---------- ----------
4)Mrs. Janani S
Address of Applicant :Assistant Professor, Information Technology, KPR College of Arts Science and Research, Coimbatore-641407 ---------- ----------
5)Mrs. Raynukaazhakarsamy
Address of Applicant :Assistant Professor, Department of BCA, Nehru Arts and Science College, Coimbatore - 641105 ---------- ----------
6)Dr Dileep Kumar Singh
Address of Applicant :Assistant Professor, Amity Business School, Amity University Chhattisgarh, Raipur-493225, ---------- ----------
7)Dr. Ashish Gupta
Address of Applicant :Professor & Head, English , Government Girls College. , Betul-460001 ---------- ----------
8)Dr Rishi P Shukla
Address of Applicant :Associate Professor, Apex Institute of Management Chandigarh University Mohali - 140401 ---------- ----------
9)Mr. Anil Kumar Bhuyan
Address of Applicant :Assistant Professor, Department of Management, NM Institute of Engineering and Technology, Bhubaneswar, Odisha, Bhubaneswar-751019 ---------- ----------

(57) Abstract :
Cost managing using digital technology ABSTRACT: This is an exception to the rule. When a business encountered difficulty, the only issue that arose was cost management. It was originally considered unusual, but in recent years has become a widespread practise that garners considerable attention in both good and bad times. If you seek to reduce costs, even if the goal is modest, you are more likely to fail. Cost management has evolved into a strategic tool capable of revolutionising entire industries and fundamentally altering how businesses operate as robotic process automation, analytics, and cognitive technologies have become more prevalent. While cost control is a difficulty, it is not the only one. Numerous findings reveal that many businesses are rethinking their cost management strategies in response to rapidly changing global business conditions. They want to use the funds to fund their strategic objectives of increased sales and profitability, as well as the introduction of new technologies, in order to expand their business and produce more revenue.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017966 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : The impact of High-Performance Work Systems and HRIS on employee performance

(51) International classification :G06Q0010100000, G06Q0010060000, G06Q0030020000, G06Q0010040000, B42D0015000000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Rekha N Patil
Address of Applicant :Assistant Professor VTU Centre for PG Studies, Kalaburagi, Karnataka, India Pin: 585105 State : Karnataka Country: India ---------- ----------
2)Dr. Sarbananda Sahoo
3)Dr. Budhi Sagar Mishra.
4)Dr. Prasanta Chatterjee Biswas
5)Ms. Neelam Yadav
6)Prof (Dr.) Payal Garg
7)Dr. V. Murugesh
8)Dr.T.Naresh Babu
9)Dr.N.Suhasini
10)Mr. Sumit Kumar
11)Dr. K. Sivaperumal
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Rekha N Patil
Address of Applicant :Assistant Professor VTU Centre for PG Studies, Kalaburagi, Karnataka, India Pin: 585105 State : Karnataka Country: India ---------- ----------
2)Dr. Sarbananda Sahoo
Address of Applicant :Dean Shri Venkateshwara University, NH-24, Rajabpur, Dist: Ameoha Pin : 244236 State : U. P Country : India ---------- ----------
3)Dr. Budhi Sagar Mishra.
Address of Applicant :Assistant professor. Department of Management. L.N.Mishra College of Business Management. Bhagwanpur chowk Muzaffarpur-842001 Bihar, India ---------- ----------
4)Dr. Prasanta Chatterjee Biswas
Address of Applicant :Associate Professor Faculty of Management Studies, Marwadi University, Rajkot- Morbi Road, Rajkot Pin : 360003. State: Gujarat Country: India ---------- ----------
5)Ms. Neelam Yadav
Address of Applicant :Assistant Professor Vivekananda Global university Pin: 303012 State: Rajasthan Country: India ---------- ----------
6)Prof (Dr.) Payal Garg
Address of Applicant :Director (Administration & Finance) RBS Management Technical Campus, Khandari Farm Agra (U.P.) Pin: 282002 State: U.P. Country: India ---------- ----------
7)Dr. V. Murugesh
Address of Applicant :Assistant Professor PSG College of Arts and Science, Coimbatore Pin:641014 State: Tamilnadu Country: India ---------- ----------
8)Dr.T.Naresh Babu
Address of Applicant :Assistant Professor KSRM College of Management studies, KADAPA Pin: 516003 State: Andhra pradesh Country: India ---------- ----------
9)Dr.N.Suhasini
Address of Applicant :Assistant Professor KSRM College of Management studies, KADAPA Pin: 516003 State: Andhra pradesh Country: India ---------- ----------
10)Mr. Sumit Kumar
Address of Applicant :Asstt. Professor TMIMT (College of Management), Teerthanker Mahaveer University, Moradabad (UP), India City: Moradabad – Pin:244001, State: UP Country: India ---------- ----------
11)Dr. K. Sivaperumal
Address of Applicant :Assistant Professor, Vel Tech Ranga Sanku Arts College, Avadi, Chennai- 62. State: TamilNadu Country: India ---------- ----------

(57) Abstract :
The impact of High-Performance Work Systems and HRIS on employee performance Abstract: To aid small and medium-sized businesses, this article explores in depth why human resource information systems (HRIS) are becoming increasingly important, as well as how HPWS may help. They will be thoroughly examined in this study project to ascertain whether any issues may arise when they are used in real life. We performed a qualitative descriptive survey to study and synthesise these practises in small businesses. A Likert scale was used to answer open-ended questions. Human resources management personnel, as well as those who work there, were selected from the Human Resources Management department. 250 questionnaires were delivered to 25 industrial enterprises' human resources departments (10 questionnaires in each firm). Our survey sampled over 22 businesses, with 220 of them being useful. The data indicated that individuals responded to stimuli in a variety of ways, which was surprising. Numerous elements have an effect on HRIS and HPWS, including human resource processes and information effects, as well as hiring, flexible work designs, and participatory decision making. According to several readers of this article, it may be helpful for small and medium-sized businesses (SMEs) in India to increase their expenditure on HRIS and HPWS practises in the future. This could have a noticeable effect on employee happiness.

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(21) Application No.202241017967 A
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(54) Title of the invention : Automobile Seat Design Ergonomics and Whiplash Protection system

(51) International classification :B60N0002427000, B60N0002420000, A41D0013050000, B60N0002240000, A42B0003040000
(86) International Application No :PCT//
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(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Pradeep Johnson
Address of Applicant :Associate Professor, Department of Mechatronics Engineering, Hindusthan College of Engineering and Technology, Valley Campus Coimbatore – 641032 Tamilnadu. India ---------- ----------
2)Mr. M. Naveenkumar
3)Mr. G. Manojkumar
4)Dr. P. N. Karthikeyan
5)Dr. Senthilkumar C
6)Mr. A. Prabhu
7)Mr. G. Prabhu
8)Mr. K. Sivakumar
9)Mr. Krishnaraj. J
10)Mr. Samuel Gemsprim M
11)Mr. L. Karthick
12)Mr. Naresh Mallireddy
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Pradeep Johnson
Address of Applicant :Associate Professor, Department of Mechatronics Engineering, Hindusthan College of Engineering and Technology, Valley Campus Coimbatore – 641032 Tamilnadu. India ---------- ----------
2)Mr. M. Naveenkumar
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Arjun College of Technology, Coimbatore - Pollachi Highway, Thamaraikulam, Coimbatore - 642120 TamilNadu India ---------- ----------
3)Mr. G. Manojkumar
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Arjun College of Technology, Coimbatore - Pollachi Highway, Thamaraikulam, Coimbatore - 642120 TamilNadu India ---------- ----------
4)Dr. P. N. Karthikeyan
Address of Applicant :Professor, Department of Aeronautical Engineering, Hindusthan College of Engineering and Technology, Valley Campus Coimbatore – 641032 Tamilnadu. India ---------- ----------
5)Dr. Senthilkumar C
Address of Applicant :Associate Professor, Department of Mechanical Engineering, SNS College of Technology, SNS Kalvi Nagar, Vazhiyampalayam, Coimbatore, Pin:641035 State: Tamilnadu Country: India ---------- ----------
6)Mr. A. Prabhu
Address of Applicant :Assistant professor, Department of Mechatronics Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore, 641032 Tamilnadu, India ---------- ----------
7)Mr. G. Prabhu
Address of Applicant :Assistant professor, Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore 641032 Tamil Nadu India ---------- ----------
8)Mr. K. Sivakumar
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore – 641032 Tamilnadu. India ---------- ----------
9)Mr. Krishnaraj. J
Address of Applicant :Assistant Professor, Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore, 641032 Tamilnadu, India ---------- ----------
10)Mr. Samuel Gemsprim M
Address of Applicant :Assistant Professor, Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore – 641032 Tamilnadu, India ---------- ----------
11)Mr. L. Karthick
Address of Applicant :Assistant professor, Department of Mechanical Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore, 641032 Tamilnadu, India ---------- ----------
12)Mr. Naresh Mallireddy
Address of Applicant :Assistant professor, Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Valley Campus, Coimbatore, 641032 Tamilnadu, India ---------- ----------

(57) Abstract :
Automobile Seat Design Ergonomics and Whiplash Protection system Abstract: Due to the rapid advancement of car performance, greater safety regulations have accelerated the industry's growth. There is a direct correlation between where you sit in an automobile and the vehicle's safety and reliability. When it comes to racing, drivers' vision, weariness, and comfort all play a role in who wins. Even though the seat is supposed to be more comfortable, numerous people have died or been injured in collisions involving quick accelerations and decelerations. Due of the driver's body's flexibility, when the seat is fastened in place, it transmits all of the crash's shock to them. All of these pressures are absorbed by the body, resulting in serious injury and, in some cases, death. Whiplash injuries can be fatal, although they are more frequently than not associated with long-term damage to the cranial spine and respiratory problems. It occurs when a neck ligament is torn or injured, impairing a person's ability to move his or her neck for the remainder of their lives. When slapped from behind, it accelerates. When the knocked-out automobile accelerates and decelerates rapidly, it travels at a high rate of speed. As long as this is the case, the inertia of the driver and the restrained seat will remain constant. As a result, the body absorbs the entirety of the stress, rather than the frame or seat, which would normally carry the force of a fall or bump. According to the article cited in the text, there is an ergonomic seat with a novel whiplash and collision safety system that combines both a basic whiplash absorption system and a huge collision absorption system. The seat's subsequent portion is separated into three primary areas. It is positioned in such a way that it can act as a sliding support for your neck. This section contains two subsections. The neck support is connected to the main seat through a hinge. This means that the principal seating stock and a back-supporting frame are hinged together in the seat's structure. Two torsional springs on each side of a hinge lift the rear support structure. This offers the driver with the finest shock absorption and smoothest support possible. Seats are held in place when dragged. A spring guarantees that the backrest structure goes backward after being struck. It is the major system responsible for absorption and protection of the neck and head beneath the backrest framework. Steel constraints are essential to allow for the use of lightweight materials such as carbon fibre, aluminium, and hard plastic fibre throughout the structure. When driving on a highway or over a long distance, you may wish to avoid driving with your hands wide out. Maintain straight hands while driving on a highway, where steering is minimal and harsh steering is uncommon. Because you maintain a straight grip on your hands for an extended amount of time, this results in elbow strain. Any car, regardless of its power or utility, must have a comfortable driving position. Numerous elbow problems are caused by chronic elbow strain that might last years, if not decades. Osteoarthritis, which is caused by strained joints, has become more prevalent and dangerous in recent years. Ligaments become inflamed as a result of repeated stretching or slight injury. Individuals who repeatedly strain their elbows may develop synovial fluid leaks and elbow cysts. When the immune system attacks its own cells, auto immune disease can occur, which is currently considered incurable. As a result, your body begins fighting against itself. This is referred to as auto-immune disease. The accompanying video details an ergonomic retractable arm/elbow rest, which is especially important on the highway. They can be reintroduced to their original site in cities or areas with jagged edges. There are several methods for prolonged sitting. Sitting over an extended amount of time places your neck, spine, and pelvis in natural-looking positions. Raising your legs lowers pressure on your knee joint, lower back, and tummy.

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(21) Application No.202241017968 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : System to carry over the campaign conducively

(51) International classification :G06Q0030020000, G06Q0050000000, G06Q0030000000, G06Q0010000000, A61Q0019000000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
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(71)**Name of Applicant :**
1)Dr.S.Vanithamani
Address of Applicant :Associate Professor, Master of Computer Applications, M.Kumarasamy College of Engineering, Karur-639113 ---------- ----------
2)Dr. V.Kannan
3)Pushpendra Ratnam Verma
4)Mrs. Raynukaazhakarsamy
5)Dr. Rakesh Jaychand Motiyani
6)Dr. S. Saravanan
7)Mr. S. Pradeep
8)Mr Dibakar Sinha
9)Dr. Bhavinkumar Ganpatbhai Patel
10)Dr. Rakesh Jaychand Motiyani
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.S.Vanithamani
Address of Applicant :Associate Professor, Master of Computer Applications, M.Kumarasamy College of Engineering, Karur-639113 ---------- ----------
2)Dr. V.Kannan
Address of Applicant :Managing director, CLDC Research and Development No.997, Mettupalayam Road, Near XCut Signal,R.S.Puram, Coimbatore641002 ---------- ----------
3)Pushpendra Ratnam Verma
Address of Applicant :Assistant Professor, Electronics & Communication Engineering, Himgiri Zee University, Dehradun-248197 ---------- ----------
4)Mrs. Raynukaazhakarsamy
Address of Applicant :Assistant Professor, Department of BCA, Nehru Arts and Science College, Coimbatore – 641105 ---------- ----------
5)Dr. Rakesh Jaychand Motiyani
Address of Applicant :Associate Professor, Electrical Engineering Department, GIDC Degree Engineering College, Navsari-396406 ---------- ----------
6)Dr. S. Saravanan
Address of Applicant :Assistant professor & Research Guide,PG and Research Department of commerce,Dr. Ambedkar Government Arts College,(Autonomous, Affiliated to University of Madras) vyasarpadi, chennai-600039 ---------- ----------
7)Mr. S. Pradeep
Address of Applicant :Assistant Professor , Mathematics , Sri Krishna College of Engineering and Technology , Coimbatore -641 008 ---------- ----------
8)Mr Dibakar Sinha
Address of Applicant :Assistant Professor , CSE, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore-453555 ---------- ----------
9)Dr. Bhavinkumar Ganpatbhai Patel
Address of Applicant :Associate Professor, Civil Engineering Department, GIDC Degree Engineering College, Navsari-396406 ---------- ----------
10)Dr. Rakesh Jaychand Motiyani
Address of Applicant :Associate Professor, Electrical Engineering Department, GIDC Degree Engineering College, Navsari.- 396406 ---------- ----------

(57) Abstract :
System to carry over the campaign conducively ABSTRACT: By engaging in decision-making processes, citizens, civil society organisations (CSOs), and other groups can influence how laws and regulations are formed. The public's participation in these activities is becoming increasingly critical. The social media have transformed how businesses and consumers connect. Businesses who adopt social media marketing may be able to save money, enhance brand awareness, and even profit. However, it becomes a significant issue if you have poor electronic word-of-mouth and an insufficient online brand presence. In this paper, digital media marketing experts discuss a number of topics. They also explore AI, augmented reality, digital management, and mobile marketing and advertising in this crucial subject. Experts' opinions take ethical concerns into account as well. Academics and those working in the field of this subject will benefit from our endeavour. It identifies research gaps and the constraints of current research, as well as questions and propositions that can aid in the advancement of this field of study.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2022

(21) Application No.202241017992 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A MACHINE LEARNING IMPLEMENTED SYSTEM AND METHOD FOR CORONA RECOGNITION BASED ON VISIBLE LIGHT COLOR

(51) International classification :G06K0009460000, G06N0020000000, G06T0007900000, H04N0009040000, G02B0005200000
(86) International Application No :PCT//
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. S. Padmapriya
Address of Applicant :Assistant Professor, Dept. of Computer Science, SRM Trichy Arts and Science College, Irungalur, Tamil Nadu, India ---------- ----------
2)Munirathinam .T
3)Nobendu Mukerjee
4)Faheem Ahmad Reegu
5)Dr. Shweta Singh
6)Dr. Sheshang Degadwala
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. S. Padmapriya
Address of Applicant :Assistant Professor, Dept. of Computer Science, SRM Trichy Arts and Science College, Irungalur, Tamil Nadu, India ---------- ----------
2)Munirathinam .T
Address of Applicant :Assistant professor, Department of Computer Science and Engineering Bannari Amman Institute of Technology, Sathyamangalam ---------- ----------
3)Nobendu Mukerjee
Address of Applicant :Department of Microbiology, Ramakrishna Mission Vivekananda Centenary College, West Bengal, Kolkata-700118, India ---------- ----------
4)Faheem Ahmad Reegu
Address of Applicant :Lecturer , College of Computer Science and Information Technology, Jazan Unversity , KSA ---------- ----------
5)Dr. Shweta Singh
Address of Applicant :Associate Professor, Electronics and Communication Department, IES College of Technology, Bhopal ---------- ----------
6)Dr. Sheshang Degadwala
Address of Applicant :Associate Professor, Sigma Institute of Engineering, Engineering Block, Sigma Group of Institutes, Ajwa-Nimeta Road, Bakrol, Vadodara, Gujarat-390019, India ---------- ----------

(57) Abstract :
The present invention relatesa machine learning implemented system and method for corona recognition based on visible light color. The prediction shows that the color features perform the best among all the characteristics information and the KNN algorithm performs the best among all four algorithms. The model shows consistently good performance with different cameras and camera settings as well. Discharge produces radiation of UV, visible, and near-infrared wavelengths. The RGB color information characteristics method can also be applied to other discharge types other than corona.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202241018227 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RENEWABLE RESOURCE POWERED E-WASTE SEGREGATOR

(51) International classification :C22B0007000000, B03B0009060000, C22B0001000000, B09B0003000000, B65F0001000000
(86) International Application No :PCT//
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SRIVIDYA RAMISETTY
Address of Applicant :#51/1, SRI KRISHNA NILAYA, TIRUMALA SHETTY HALLI, SAMETHANA HALLI POST, ANUGONDANA HALLI HOBLI, HOSKOTE TALUK , BENGALURU RURAL- 560067 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Prof. Vyshali Rao K P
Address of Applicant :Asst Professor Dept of ISE CMR Institute of Technology 132 AECS Layout ITPL Main Road, Kundalahalli Bangalore 560037, India ---------- ----------
2)Dr. Srividya Ramisetty
Address of Applicant :Associate Professor Dept of ISE CMR Institute of Technology 132 AECS Layout ITPL Main Road, Kundalahalli Bangalore 560037, India ---------- ----------

(57) Abstract :
As humans progress and with rapid urbanization, accumulation of non-bio degradable waste has seen an exponential growth. Management of such waste has become a greatest challenge to human race. The Invention discloses a hybrid methodology using RENEWABLE resource as a source of energy for intelligently segregating recyclable materials from e-waste. Primary objective is to make the e-waste like Computers and its accessories, mobile phones, Printed Circuit Boards (PCB), cathode ray tubes (CRTs), easy to be recyclable. It Segregates e-waste into plastic and metal, incorporate solar cells to power the segregation process.

No. of Pages : 9 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202241018366 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FRUIT PLUCKING DEVICE AND METHOD THEREOF

(51) International classification :A01D0046247000, A22C0021020000, A01D0046040000, B65B0025040000, A47J0019020000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

(71)**Name of Applicant :**
1)CMR College of Engineering & Technology,
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
2)N.Manasa
3)R.Aravind Goud
4)N.Prem Kumar
5)CH.Sai Prasad
6)M.Jaya Sree
7)R.Venkateswara Reddy
8)Kayyam Sathish
9)T.Rajesh
10)S.Siva Skandha
11)N Muneshu Babu
12)Prof. E.N.V Purnachandra Rao
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)CMR College of Engineering & Technology,
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
2)N.Manasa
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
3)R.Aravind Goud
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
4)N.Prem Kumar
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
5)CH.Sai Prasad
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
6)M.Jaya Sree
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
7)R.Venkateswara Reddy
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
8)Kayyam Sathish
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
9)T.Rajesh
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
10)S.Siva Skandha
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
11)N Muneshu Babu
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------
12)Prof. E.N.V Purnachandra Rao
Address of Applicant :CMR College of Engineering & Technology, Kandlakoya, Medchal Road, Hyderabad, Telangana, India ---------- ----------

(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards a fruit plucking device. The fruit plucking device comprising: a supporting rod; and a fruit plucking arrangement, which comprises: a plucking frame supported on a top portion of the supporting rod, the plucking frame being configured to form a substantial loop portion, and having a blade portion for cutting fruit; and a collector net provided underneath the plucking frame for collecting the fruit cut by the blade portion of the plucking frame. FIG.5

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(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202241018373 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A framework for emotion detection from artwork using deep learning

(51) International classification :G06N0020000000, A61B0005160000, G16H0010200000, G16H0020700000, G16H0050700000
(86) International Application No :PCT// /
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Shreyaa Saravanan
Address of Applicant :C204 Tivoli Apartments, 64 Justice Ratinavel Pandian Street, Golden George Nagar, Chennai, Tamil Nadu 600107 ---------- ----------
2)C. Vijayalakshmi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Shreyaa Saravanan
Address of Applicant :C204 Tivoli Apartments, 64 Justice Ratinavel Pandian Street, Golden George Nagar, Chennai, Tamil Nadu 600107 ---------- ----------
2)C. Vijayalakshmi
Address of Applicant :Department of Statistics and Applied Mathematics,Central University of Tamil Nadu, Thiruvarur ---------- ----------

(57) Abstract :
The proposed invention is a system to detect and extract emotions from artwork using advanced technologies such as machine learning and image processing. The system is designed primarily to aid with the process of art therapy for children with Autism Spectrum Disorder. The invention provides for a fully automated emotion detection system, with the inferior alternative being the manual analysis of a person's drawing over the course of several months. According to the World Health Organization (WHO), it has been estimated that as of 2021, one in 160 children has autism. Some studies have reported higher numbers in adults as well, since ASD affects people of all ages. A broad range of interventions and treatment plans can optimize and ensure the development, well-being and quality of life of people with autism. The proposed method aims to alleviate the struggles faced by people who undergo art therapy and make it easier for parents and caretakers to monitor their progress. This invention proposes an effective way to allow people with ASD to express themselves and for parents to analyze their emotions while maintaining confidentiality. The deep learning backend made of the CNN is fast, accurate and produces outputs in real-time. The system is secure and includes a login functionality to ensure performance without compromising security. Overall, the invention has the potential to revolutionize art therapy the way that the process is automated. It will uplift the ASD community by increasing their development in all fields and allowing progress tracking in a more effective manner.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202241018413 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A METHOD FOR PRODUCING ROBUST CONCRETE USING DOMESTIC TREATED WASTEWATER, AND USES THEREOF

(51) International classification :C02F0101100000, C12P0019020000, C02F0003000000, C09D0007610000, C08J0011100000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)MANJUNATHA M
Address of Applicant :Assistant Professor, Department of Civil Engineering, GITAM University, Bangalore - 562163, Karnataka, India. ---------- ----------
2)BHARATH A
3)RANJITHA B TANGADAGI
4)RESHMA TV
5)PREETHI S
6)SHARATH BABU KHEDAGI
7)RAJANI V AKKI
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)MANJUNATHA M
Address of Applicant :Assistant Professor, Department of Civil Engineering, GITAM University, Bangalore - 562163, Karnataka, India. ---------- ----------
2)BHARATH A
Address of Applicant :Assistant Professor, Department of Civil Engineering, GITAM University, Bangalore - 562163, Karnataka, India. ---------- ----------
3)RANJITHA B TANGADAGI
Address of Applicant :Assistant Professor, Department of Civil Engineering, GITAM University, Bangalore - 562163, Karnataka, India. ---------- ----------
4)RESHMA TV
Address of Applicant :Assistant Professor, Department of Civil Engineering, GITAM University, Bangalore - 562163, Karnataka, India. ---------- ----------
5)PREETHI S
Address of Applicant :Assistant Professor, Department of Civil Engineering, REVA University, Bangalore - 560024, Karnataka, India. ---------- ----------
6)SHARATH BABU KHEDAGI
Address of Applicant :Assistant Professor, Department of Civil Engineering, East Point College of Engineering and Technology, Bangalore - 560049, Karnataka, India. ---------- ----------
7)RAJANI V AKKI
Address of Applicant :Assistant Professor, Department of CIVIL Engineering, East Point College of Engineering and Technology, Bangalore - 560049, Karnataka, India. ---------- ----------

(57) Abstract :
The present invention relates to a method for converting domestic treated wastewater into useful products. Specifically, the present invention relates to a method for producing robust concrete using domestic treated wastewater.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2022

(21) Application No.202241018531 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN AND DEVELOPMENT OF EMBEDDED SYSTEM BASED AUTOMATED JET NEBULIZER SPRAY PYROLYSIS SYSTEM

(51) International classification :A61M0011060000, G06F0009320000, A61M0011000000, B05B0001000000, C23C0022760000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. V. Jagadeesan
Address of Applicant :Assistant Professor, Department of Electronics, PSG College of Arts and Science, Coimbatore-641014, Tamilnadu, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. V. Jagadeesan
Address of Applicant :Assistant Professor, Department of Electronics, PSG College of Arts and Science, Coimbatore-641014, Tamilnadu, India ---------- ----------

(57) Abstract :
[013] In recent years, the spray nozzle has been moved using a microcontroller-based automated system to improve film quality. Jet nebulizer spray pyrolysis system was designed for automation process to get uniform deposition. In order to have a precise design with the spray nozzle movement, 3D model of an automated jet nebulizer spray pyrolysis system was designed using SOLIDWORKS. A high-performance Microchip 8-bit AVR RISC-based microcontroller (ArdiunoUNO-ATmega328) was used to control the system. The microcontroller operated based on the program written in the Arduino IDE softwareH-bridge configuration based L293N motor driver used to drive the motor in either direction according to PWM signal. Two independent stepper motors are employed to move the spray nozzle in a controllable way both in X and Y directions. It transfers signals to the driver units for rotating the stepper motor in the X and Y-axis directions, according to the preloaded software in the microcontroller. The innovation of our automated jet nebulizer spray pyrolysis system is based on modifying the spraying technique in the conventional manual nebulizer spray pyrolysis system, where the deposition process is entirely dependent on the automated spraying process. This low cost automated jet nebulizer helps the researcher to get high quality thin films in an easiest way. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5] [FIG. 6] [FIG. 7]

No. of Pages : 19 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018534 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GREEN INITIATIVE LOW COST ELECTRIC VEHICLE

(51) International classification	:H01M0010625000, H01M0004360000, H01M0002100000, B60L0050640000, C09D0007620000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. G B Krishnappa
Address of Applicant :Dean (R&D), Vidyavardhaka College of Engineering, Gokulam 3rd Stage, Mysuru - 570 002 ---------- ----------
2)Vidyavardhaka College of Engineering
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Gopala Reddy K
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
2)Dr. Shobha Shankar
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
3)Dr. Rashmi.S
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
4)Dr. Lokesh C
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
5)Prof. Reshma V P
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
6)Saima Zulfa
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
7)MNV Shwetha R
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------
8)Nanditha J
Address of Applicant :Vidyavardhaka College of Engineering, # 206, Gokulam 3rd Stage, Mysuru ---------- ----------

(57) Abstract :
In order to reduce the usage on oil and to reduce pollution, the development of electric vehicles has been stimulated in many countries. The implementation of EV's especially battery electric vehicles, is observed as the solution to the energy calamity and environmental issues. This paper provides a comprehensive review about the importance and the design of low cost electric vehicle.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018549 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COST EFFECTIVE LOW SPEED WIND TUNNEL AS AN EXPERIMENT IN SCHOOLS/COLLEGES

(51) International classification	:G01M0009040000, G01M0009060000, G01M0009020000, G01M0009000000, A63G0031000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Mr. Prasad G
Address of Applicant :7/ 288, T. Manihatty Village, The Nilgiris - 643214, Tamil Nadu, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. Prasad G
Address of Applicant :7/ 288, T. Manihatty Village, The Nilgiris - 643214, Tamil Nadu, India ---------- ----------

(57) Abstract :
COST EFFECTIVE LOW SPEED WIND TUNNEL AS AN EXPERIMENT IN SCHOOLS/COLLEGES The low speed wind tunnels are still used in most of the research laboratories doing work related to aerodynamics of air/road vehicles. The basic knowledge about the principles and operations of wind tunnel is mainly required for aeronautical, mechanical, automobile, etc., engineering graduates. The wind tunnel is designed to do basic level of Aerodynamic testing and flow visualization at a speed of 15 m/s. The geometry of the wind tunnel is carefully chosen to fit in a small area without compromising the smooth air flow in the test section. Figure of abstract: FIG. 1

No. of Pages : 0 No. of Claims : 0

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018620 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PARKINSON DISEASE DETECTION USING DEEP NEURAL NETWORKS

(51) International classification :G06N0003040000, G06N0003080000, G16H0030200000, G06T0007330000, A61K0036470000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. V.V. SUNIL KUMAR
Address of Applicant :PROFESSOR DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE KAVALI ANDHRA PRADESH 524201 ---------- ----------
2)Dr. G. VIJAY KUMAR
3)Dr. V. MADHUSUDHANA REDDY
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. V.V. SUNIL KUMAR
Address of Applicant :PROFESSOR DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE KAVALI ANDHRA PRADESH 524201 ---------- ----------
2)Dr. G. VIJAY KUMAR
Address of Applicant :PROFESSOR DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE KAVALI ANDHRA PRADESH 524201 ---------- ----------
3)Dr. V. MADHUSUDHANA REDDY
Address of Applicant :PROFESSOR DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE KAVALI ANDHRA PRADESH 524201 ---------- ----------

(57) Abstract :
Parkinson's Disease (PD) is an ongoing, degenerative issue, which prompts a scope of motorand mental side effects. PD conclusion is a difficult assignment since its side effects are the same as different sicknesses like ordinary maturing and fundamental quake. Much examination has been applied to diagnosing this illness. This venture plans to mechanize the PD conclusion process utilizing profound learning, Recursive Neural Networks (RNN) and Convolutional Neural Networks (CNN), to separate among sound and PD patients. Other than that, since various datasets may catch various parts of this sickness, this venture intends to investigate which PD test is more viable in the separation cycle by breaking down various imaging and development datasets (outstandingly block furthermore, twisting pentagon datasets). Moreover, this venture assesses which dataset type, imaging or time series, is more powerful in diagnosing PD. Numerical models like Deep Learning (DL) give a reasonable procedure to identify illness side effects. These displaying approaches incorporate geographies particular for some sort of datasets, for example, imaging datasets and time-series datasets (for example a dataset contained of a bunch of arrangements, where each succession contains information focuses that are filed in time request). Consequently, it is qualified to examine the profound learning strategies on the PD, particularly after the late progress of profound learning in various fields.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018625 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PSP POSITIONER FOR INTRA ORAL RADIOGRAPHS

(51) International classification :A61B0006000000, H04L0025030000, A61M0031000000, A61B0005220000, A61B0010020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NIKITHA SUZANNE VARGHESE
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This design is proposed to patent an instrument used to place the psp plate in proper position while taking x-rays. This instrument is mainly aimed at the pediatric population as children are not capable of holding the sensors in the proper position. This proposed design is made of silicone which is flexible and does not hurt the child while biting on it to keep it in place. The positioner helps to reduce the radiation exposure of the operator as the child is capable of holding the instrument just by biting on the flexible occlusal surface of the instrument.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018626 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PEDO PLUG

(51) International classification :A61C0003000000, A61C0003080000, A61C0005420000, A61C0005620000, A61B0017420000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. BALAJI. S
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)DR. VIGNESH. R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
There is no clear consensus on hand instrumentation.Each dental hand instrument has a defined use in a dental procedure.Restorative instruments are used by the dentist or dental assistant to restore a tooth by placing, condensing and carving a dental material to the tooth structure. Restorative dental hand instruments include the amalgam carrier, burnisher, condensers, composite placement instruments, carvers, and Woodsen.a hand instrument that allows condensation of the obturating paste into the canals with the shank dimension of 10cm, the ends of the instrument are disc shaped.Disc shaped condensing head is present on both the ends and is of variable sizes.0.8mm on one end and 1.6mm on the other end.The length of the shank of the instrument is 7mm.The instrument is made of stainless steel and has indentations present on the shank for a firmer grip.There are serrations seen on the bottom of the condenser.My invention consists of Disc shaped condensing heads of variable size on both the ends .0.8mm and 1.6mm diameter on either ends.The handle of the instrument is 20mm in length and has indentations for firmer grip.The length of the shank of the instrument is 7mmThe instrument is made of stainless steel in order to give a good flow of material and provide a hermetic seal of the root canals. .

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018627 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LIPODENT

(51) International classification :A61Q0001060000, A61Q0001040000, A61K0008370000, A61K0009000000, A45D0040000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. NANDINI DEVI. M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)DR. VIGNESH. R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
Various topical agents are available for the treatment of mouth ulcers in the form of gel,ointments,etc...Application of these agents is done with clear fingertip which the patients may neglect and unhygienic application may result in further infection . While the primary function of a lipstick is to enhance the lip beauty, it has emerged as a drug-delivery system that can offer translabial drug delivery.The lipsticks were evaluated for their organoleptic properties such as spreading, covering property, hardness, shine, and gloss and found to be satisfactory product to give attractive beauty with therapeutic effect on the diseased lips.My proposed invention consists of Cap with the dimensions of 50-57mm in height used to cover the shell with medicament.Base with dimension of 1.5 x 1.5 cm to which a spiral is attached which is used for lifting the lipstick shell outside. Shell with medicament has a dimension of 1cm diameter and height of 2.5cm used to treat oral mouth ulcers.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018632 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AIROTOR HANDPIECE WITH INTRAORAL CAMERA

(51) International classification :A61B0001240000, A61B0001040000, G06F0003048200, A61B0001247000, G06F0016951000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE, SAVEETHA DENTAL COLLEGE
Address of Applicant :162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)V RANJITH AKSHAY SESHADRI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)EMG.SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
This invention in particular relates to the operative dentistry that helps the dentists document their cases.This invention is an easier approach for dentists to document the cases without investing time and money.The airotor handpiece has an inbuilt camera with a picture quality of 12 MP and a magnification ratio of 1:3.lt also has a charging port where the intraoral camera camera can be charged.The handpiece is also designed in such a way that it is easier to use.lt will also improve the work efficiency of the clinicians particularly the students.No special training is necessary to use this handpiece as this is user friendly.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018634 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DISTRACTION HOOD

(51) International classification	:A61M0016060000, A61G0013120000, A61F0013120000, A61G0015120000, A61K0006540000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE, SAVEETHA DENTAL COLLEGE
Address of Applicant :162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)V RANJITH AKSHAY SESHADRI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)GANESH J
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
This invention in particular relates to the sedative dentistry that helps the patients cope up with the anxiety and fear of dental procedures.The distraction hood is a combination of VR glasses and nasal hood.The VR glass is attached to the nasal hood by means of a metal connector.The VR glass has an elastic band for its attachment to the head of the patient and it can be adjusted according to the head size of the patient.The metal connector that attaches the VR to the nasal hood can also be easily removed when it is not required.The distraction hood improves the quality of the treatment as there is no hindrance from the patient.lt is very easy to use.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018635 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LED MOUTH MIRROR

(51) International classification :A61J0007000000, A61B0017000000, A61B0001240000, A61B0001247000, A61C0001080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. B. DINESH KUMAR
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. LAVANYA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
Mouth mirror is an instrument used in dentistry. Its most important function is for indirect vision, reflecting light and retraction of the soft tissues. The main problem with the use of normal mirrors is the lack of light inside the intra oral cavity. There are LED Lights around the mouth mirror which can be switched on via a switch and there is a battery in the handle of the mouth mirror

No. of Pages : 6 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018636 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LED EDNOMOTAR

(51) International classification :A61C0005420000, A61C0005400000, A61C0001000000, A61C0001180000, A61C0001060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. B. DINESH KUMAR
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. LAVANYA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
Disclosed herein is a system for the endodontic treatment of a root canal. The system includes an endodontic instrument; an endodontic handpiece having a drive motor for rotating the endodontic instrument releasably attached to the handpiece; an LED light fixed at the head and a control unit for controlling the rotation of the endodontic instrument according to one or more predetermined rotational sequences. The rotational sequences comprising reciprocating the endodontic instrument by continuously sequentially rotating the endodontic instrument in a first direction followed by reversing the direction of rotation so that 0.5 xF < a < and 3 < a / p < 20, wherein a represents a rotational angle in a direction in which the rotating endodontic instrument removes debris from the root canal, p represents a rotational angle in the opposite direction, and represents the elastic angle of the endodontic instrument at which plastic deformation occurs in the direction of a.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018638 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Design of Surveillance Rover Using Rocker Bogie Mechanism

(51) International classification	:B64G0001160000, G01S0019040000, G01C0015000000, G05D0001000000, A61K0031551300
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Daniel Lawrence I
Address of Applicant :2/83, Kottagaimedu, Arumbanur (Post), Madurai-625104. ---------- ----------
2)Dr.V.Balaji
3)Mrs.R.Kumutha
4)Dr.V.L.Raja
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Daniel Lawrence I
Address of Applicant :2/83, Kottagaimedu, Arumbanur (Post), Madurai-625104. ---------- ----------
2)Dr.V.Balaji
Address of Applicant :Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
3)Mrs.R.Kumutha
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
4)Dr.V.L.Raja
Address of Applicant :Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
5)Mr.D.S.Ezhumalai
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
6)Mr.J.Gnanaraj
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
7)Mr.A.Anbarasan
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
8)Mr. K. Thanigavelmurugan
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
9)Mr.D.Mugesh
Address of Applicant :Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
10)Mr.C.Perumal
Address of Applicant :Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------
11)Mr.S.Sharon joe
Address of Applicant :Department of Mechanical Engineering, Loyola Institute of Technology, Palanchur, Chennai - 600123. ---------- ----------

(57) Abstract :
Design and Fabrication of Surveillance Rover Using Rocker Bogie Mechanism Abstract The invention surveillance rover using rocker bogie mechanism has to be operated on the place, where the value of gravity is lower than the earth's own gravitational coefficient at that place the existing suspension system fails to fulfill the desired result as the amount and mode of shock absorbing changes so that this mechanism can be operated on rough and harsh environment for which it was designed but for several factors restrict it operational capabilities, so the focus of our research is to overcome the restrictions or to decrease it to within an acceptable range for its smooth performance. Our research on the restrictions of the rover conducted by our team focused mainly on the drive system. We have modified to drive operations is controlled drive modules and surveillance images are transmitted via Bluetooth module, by this the operator can operate Rover from the safer distance from the danger and the height of the rover is less than 1 feet [27cm] so it can be used for research of small dark cave.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018639 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BSCPM-5 IN 1 DENTAL PEN

(51) International classification :A61C0003000000, A61C0003080000, A61B0050220000, A61C0019020000, A61C0007020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. NANDINI DEVI. M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. EMG. SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
ABSTRACT: There is no clear consensus on operative hand instrumentation. In general, there is one hand instrument that completes one task. Consequently, numerous instruments are required for the placement, shaping and condensing of a restoration. This reduces clinical efficiency, increases cost and may generate frustration. A novel dental hand instrument is being developed. The instrument can complete several tasks.The objective is to develop a novel multi-use, cost-effective dental hand instrument that had the functionality of several hand instruments. The intent was to provide an alternative instrument to several other single task instruments.My invention BSCPM 5 in 1 dental pen consists of 5different instruments combined in a single pen type arrangement. The 5 instruments are mouth mirror - which is on the top with a handle of height 24mm and a circular shaped glass mirror of 20 mm diameter.A ball burnisher with a shank of 24mm and the working end in the shape of a sphere of 1.25mm diameter. Spoon excavator - with a shank of 24mm and the working end in the shape of a concave disc of diameter 1.25mm to excavate the caries.Plastic instrument - with a shank of 24mm .used to carry the restorative material.Condenser - of dimension 1mm cylindrical in shape , used to condense the restorative materialDental pen made up of silicone to aid in autoclaving.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018640 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SINGING TOOTHBRUSH

(51) International classification	:A46B0015000000, A46B0005000000, A46B0007040000, G09B0019000000, A47K0001090000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR AYESHA FATHIMA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
It is about a singing toothbrush with a innovation to provide a audio based learning on proper brushing involving the kids in a playful and participating manner. These toothbrushes look just like adult-sized toothbrushes but are smaller so they can fit in little hands more easily. Using a soft-bristled toothbrush while they're still in the early stages of getting used to brushing their teeth. Soft bristles are gentle on the gums and still get the job done in a more kid-friendly manner. This talking toothbrush contains replaceable brush rotar so the kid can change the bristles ever)' 6 months as need. The green button attached with ON/OFF button starts to sing the song (dental instructions in the form of rhymes) for 2mins so that the child would be able to listen to it and brush in a joyful way. The brushing rhymes can be changed based on what kid wants. The bottom part contains the speaker,lid for open/close battery and the body holds the batteries.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018641 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THE GAS BOX

(51) International classification :A61K0031704000, A61K0031216000, A61M0011060000, H02J0007000000, A61K0045060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. NANDINI DEVI. M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
ABSTRACT: Nebulizers are devices that convert liquid formulations into gaseous suspended droplets.This invention in particular targets inhalational sedation.Inhalation of nebulised drug is an alternative method of administration that is relatively easy to set up, does not require venepuncture, and is associated with high bioavailability of the administered drug.My invention.The gas box focuses on the use to two refillable bottles for any combination drug delivery.lt can also allow single drug delivery by switching on only the bottle which has the desired drug.lt is handy.lrght weighted and can be carried to camp-sites also.lt can be pre-charged using a USB charging port.lt consists of The gas box is used for inhalational sedation that uses 2 combination drugs.lt contains refillable bottles of dimensions 7x2.5cm attached to the dose adjusting knob USB charging port is used for pre-charging enabling it to be used in remote campsites without electric power supply.lt has a dimension of 1.2 x 0.7 cm It is a portable device.light weighted and handy to use.Dose adjusting knobs have a diameter of 1.3cm.Mask has a dimension of 3 x 15 x 21 cm and comes in ergonomic shape that provides anatomical fit to the nose.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018643 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : 3 IN 1 TOOTHBRUSH WITH BUILT-IN TOOTHPASTE DISPENSER

(51) International classification :A61C0015040000, A46B0011000000, A46B0015000000, A61Q0011000000, A23L0033160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. AYESHA FATHIMA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
The invention is usually designed to have the complete oral health care kit compactly designed to have in all of our homes and also for the travellers which is going to be compact and clumsy free.it comes with all in one oral heath care kit like toothbrush, toothpaste, tongue cleaner and a dental floss. The parts are removable asnd the totthbrush handle , toothpaste , and dental floss are replaceable and can be changed periodically. The ADA recommends brushing your teeth for 2 minutes twice a day and flossing at least once a day. Some people prefer to floss during their morning routine, while others like one final cleaning before bed.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018644 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MODIFIED PREFRABRICATED BAND AND LOOP SPACE MAINTAINER

(51) International classification :A61C0007140000, A42C0005000000, H01B0013240000, C08L0007000000, D04B0037020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)AYESHA FATHIMA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
This invention relates to design of the prefabricatcdband and loop maintaining all the ideal requisites. The band includes prefabricated lingual sheath on either sides of the band lo maintain the bucco-lingual width of the erupting premolars. The distal part of the ligual sheath is closed. The lingual sheath is laser sintered to the band to avoid welding breakage and it encompasses the 19gauge wire.Prefabricated loop is made using 19 gauge wire which will be provided can be altered in means of mesiodiatal width and the arch width according to the child's requirement.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018645 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENDOMOTOR WITH IRRIGATING SOLUTION-IRRI MOTOR

(51) International classification :A61C0005400000, A61L0002180000, A61K0006540000, H04W0036000000, B08B0003100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)V RANJITH AKSHAY SESHADRI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)VIGNESH.R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
This invention in particular relates to the endodontics which is related to the cleaning and shaping of root canals.The IRRI motor is fitted with a water tank which can be filled with different irrigating solutions and antimicrobial agents that can disinfect the root canals of the teeth without much of time consumption.lt can be easily used by the clinicians as well as the students at ease.The Water tank that holds the irrigating solution can also be removed when it not required.lt is very user friendly and can be cleaned easily.The handpiece of the IRRI motor is also designed in such a way that it doesn't rust easily when the Solutions pass through them.lt can be used to disinfect as well as clean and shape the root canals.lt reduces time consumption when compared to conventional endomotor.Since various antimicrobial agents can be incorporated into the water tank.disinfection of the root canals can be achieved without much of time consumption

No. of Pages : 7 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018646 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GUARD & CONTOUR

(51) International classification :A61C0005850000, A61B0013000000, A61F0004000000, A61B0001240000, A61C0003140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. BALAJI .S.
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)DR. EMG. SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
Preventing accidental injuries to the tongue is the mainstay in the practice of dentistry. The function of the tongue depressor is to keep the tongue in a more recessed than usual position.Some people have a pronounced tongue movement that can be a severe limitation to their ability to accept dental care and the clinician's ability to provide it. It can compromise all aspects of dentistry, from diagnostic procedures to active treatment and can be distressing for all concerned. This invention in particular targets to reduce tongue interference during dental restorative procedures. Tongue retractors are used to hold the tongue away from the site of treatment. lt is difficult to do treatment with the tongue wiggling around the tooth all the time and the use of one hand to hold the hand piece or restorative instrument and suction or mirror to depress the tongue with the other hand. In order to reduce this difficulty or in order to do a treatment without the help of a dental assistant this novel invention of matrix band with tongue depressor is brought forth.My invention consists of 2 separate sectional matrices with ball ends on each of the.A silicone plate with gliding slots into, which the sectional matrices are fitted and adjusted according to the tooth size.The thickness of the plate is 5mm.The matrix bands do not require any forceps to place them it can be placed in its position with our hands and can be adjusted by gliding the bands according to the size of the tooth.The width of the plate is 30mm and height of the plate is 22mm . The plate is made up of silicone which is less traumatic to the soft tissues and the bands are made up of stainless steel making it autoclavable.Aids in providing not only contour to interproximal restorations but also acts as an anchor to the silicone plate which helps in reducing tongue interference.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018647 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADJUSTABLE MOUTH PROP

(51) International classification :G01N0001420000, F16K0031400000, A61D0015000000, C12N0001000000, B29L0030000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. B. DINESH KUMAR
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)DR. LAVANYA
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
This design is proposed to patent an adjustable mouth prop, used for stabilization of the mouth in Pediatric children. This proposed design has two ends, attached with the rubber plate of 5cms in length. It also contains an adjustable knob with 3 sizes namely low, medium and large, it can be adjusted depending upon the age of the patient. The rubber plate is placed on the opposite side of the working area and it offers better visualization for the operator and is easy to access. This design has a locking system to stabilize the mouth. lt is designed in such a way that the rubber plate lies on both and for maxillary and mandibular. This plier saves time for the operator. It is made up of stainless steel with rubber plates on both the ends.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018648 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RESTORE FOLD INSTRUMENT

(51) International classification :A61C0001000000, A61C0001080000, A61C0003020000, A61C0003000000, A61C0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. DIVYA MUKUNDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)DR. VIGNESH .R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
In operative dentistry ,cavity preparation in general involves cutting the tooth surface by a bur and by using a spoon excavator to excavate the caries before restoring it. Plastic instruments also known as placement instruments are designed for placing and contouring pliable restorative materials into cavity preparations. These instruments generally have rounded ends that help in applying restoratives without damaging sensitive tissues.All hand instruments are manufactured and supplied as single instrument with a single working end. Pediatric and preventive dentistry is a speciality in dentistry where children were rendered dental instruments.Providing 3 instruments tips in a single handle is easier to use and less time consuming. This invention is a dental instrument where to a single handle 3 foldable hand instruments are attached.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018649 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FUNCTIONAL LINGUAL ARCH

(51) International classification :A61C0013271000, A61C0013097000, A61C0007120000, A61C0007280000, A01H0001020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)JANVI M GANDHI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)VIGNESH .R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
The conventional lingual arch is a nonfunctional fixed space maintainer used in the mandibular arch to maintain arch length by the prevention of mesial movement of the permanent first molars. This design is proposed to patent a functional lingual arch, lingual arch with an artificial pontic attached. This functional lingual arch acts as a functional space maintainer; helps in mastication and prevents supraeruption of the opposing tooth. The artificial pontic is a tooth attached in the missing space during fabrication of the lingual arch appliance after band adaptation on 36 and 46 is done, impressions are taken and casts poured. This functional lingual arch can be used in cases with bilateral premature loss of primary molars. When the premolars are erupting this design can then be converted to a conventional lingual arch by removing the artificial pontic attached.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
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(22) Date of filing of Application :30/03/2022

(21) Application No.202241018650 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : 2 IN 1 SYRINGE

(51) International classification	:A61K0009000000, A61M0016100000, A61M0019000000, A61M0016010000, A61M0016000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. DIVYA MUKUNDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)DR. EMG. SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
The anesthesia is an essential technique used every day in dental practices. The use of syringes to administer anaesthesia is fundamental in dentistry. The anaesthesia syringes are the vehicle that transports the anaesthetic tube and the needle to perform the anaesthetic infiltration. Anaesthesia aims to eliminate the sensitivity of a specific area, in this case, the mouth. It numbs the tooth and gums so that dental treatment can be carried out painlessly and comfortably. Before administration of local anaesthesia a topical gel or spray is applied over the target area. This topical is available separately in spray or gel form. This invention is a topical spray attached on the barrel of the syringe as it reduces the time and it increase efficiency in administrating anaesthesia.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018651 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CROWN HOLDER

(51) International classification :A61C0005770000, A61C0005700000, A61C0009000000, A61C0005730000, A01G0017000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. DIYV A MUKUNDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. EMG. SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
Abstract: In pediatric dentistry stainless steel crowns are tooth-shaped caps that fit over an entire tooth. They are commonly used in pediatric dentistry as a way of preserving primary teeth that have become significantly decayed or damaged. Although the primary teeth will eventually be lost to make room for permanent teeth, it is important that they are not lost prematurely. The premature loss of primary teeth can cause a variety of complications that can ultimately affect the permanent teeth. Therefore, stainless steel crowns provide protection for baby teeth until they are naturally lost. When excessive blanching is seen on the gingival tissue , the stainless steel crown needs to be trimmed.In this invention, there are two rubber pads placed on the beak of the forceps in order to hold the crown in position while trimming.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018652 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THREE WAY MOUTH MIRROR

(51) International classification :A61M0015000000, A61B0001247000, A61L0009040000, A61C0001000000, B62K0021260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR.GURU VISHNU.C
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. VIGNESH. R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
A mouth mirror is an instrument used in dentistry. It's most important function is for indirect vision, reflecting light and retraction of the soft tissues. The main problem is when the patients breath through their mouth. The air which comes out of the lungs are warm in body temperature which fog the face of the mouth mirror so when a spray of air/jet of air hits the face continuously the dentist gets a better vision. My invention consists of The inlet of the air intake for the fan is made up of a metal mesh which does not allow small particles to get in and damage the blades of the fan. The invention consists of a body and handle. The body is the face of the mouth mirror with a dimension of 2.2 cm and the handle is of length 16.5cm. The body and handle are attached via solder. There a basically two handles one attached to the be, of the mouth mirror face and the other handle consists of the AA size battery and fan and the outlet of the air onto the face of the mouth mirror. There is a small mesh at-the bottom 1/3 of the handle just above the battery for the inlet of the air and the mesh is to protect the fan and to make sure no small particles enter the mouth mirror.

No. of Pages : 7 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018654 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : OBTURATING TIP FOR PRIMARY TEETH

(51) International classification :A61C0005500000, E02B0003120000, C08G0018480000, H05B0047100000, A61F0002420000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NIKITHA SUZANNE VARGHESE
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)MAHESH RAMAKRISHNAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
This design is proposed to patent an instrument used to simultaneously obturate three canals in primary teeth. One end of this instrument is serrated and made to adapt easily to the cartridge of the obturating material. The other end comprises of three narrow tapering tubes which can easily fit into the primary root canals. The tips are flexible to adapt to curved canals. When the obturating material is pressed into the canals, all three canals get obturated simultaneously. This is the main advantage of this instrument.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018655 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : EASE UZE MOUTH MIRROR

(51) International classification :A61C0001000000, A61C0017020000, A61C0017028000, A61B0001253000, A61C0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR.GURU VISHNU.C
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)DR. VIGNESH. R
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DR. DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
A mouth mirror is an instrument used in dentistry. It's most important function is for indirect vision, reflecting light and retraction of the soft tissues. The main problem is when the patients breath through their mouth. The air which comes out of the lungs are warm in body temperature which fog the face of the mouth mirror so when a spray of air/jet of air hits the face continuously the dentist gets a better vision. My invention consists of It is easy to use for indirect vision and easy to clean also using the water jet spray onto the face of the mirror .It can be rested on the dental chair as the chair comes with a holder for the three way syringe.The mirror can be cleaned and used at the same time. The body and the handle are welded together in a solder . The body is 2.2cm in diameter and the length is 16.5cm .the dimension of the handle is 1.5cm and it has two tubes within the body connected to the tube from the compressor .The two tubes are an inlet for air and water . We also claim that the face of the mouth mirror will be coated with a Teflon layer which makes it resistant to scratches and it is hydrophobic so water will not stick to the mouth mirror and hamper with the vision

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018659 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MOUTH MIRROR WITH TISSUE RETRACTOR

(51) International classification :A61B0017020000, A61B0017000000, A61K0036280000, A61K0031000000, A61K0031155000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NIKITHA SUZANNE VARGHESE
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
2)EMG SUBRAMANIAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, VELAPPANCHAVADI, CHENNAI, TAMILNADU, INDIA, PIN CODE-600077. ---------- ----------

(57) Abstract :
This design is proposed to patent an instrument used to simultaneously retract the soft tissues like the tongue and oral mucosa as well as providing adequate illumination during intra operative procedures. One end of the instrument is fitted with a mouth mirror while the other end is a broader flat end surface that retracts the soft tissues, preventing it from injuries made during the procedure. The instrument is bendable due to the presence of a hinge which keeps the instrument stable. The main advantage of this instrument is to provide adequate retraction as well as reduce the number of instruments used intra operatively.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018662 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INJECTABLE HYDROGEL TO PROMOTE ANGIOGENESIS AND OSTEOGENESIS FOR EFFECTIVE BONE FORMATION

(51) International classification :A61K0009000000, A61L0027520000, A61L0027540000, A61K0009060000, A61L0027560000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SARAVANAN SEKARAN
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)LAKSHMI THANGAVELU
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
Chitosan based materials are widely explored and possess special focus in bone regenerative applications in the form of scaffolds and hydrogels. Biomaterial constructs aimed for Bone regeneration applications must facilitate neo-vascularization process for bone ingrowth into the defect area. Our current invention adopted a very economical and versatile approach to synthesize an injectable hydrogel for bone regeneration applications. The inherent chelating ability of chitosan was utilized to chelate strontium from its precursor solution and the resultant chitosan-strontium composite was utilized for forming a thermosensitive hydrogel. The hydrogel is liquid at room temperature and solidifies at physiological temperature (37°C). The strontium released from the hydrogel following in vivo hydrolysis will enable an angiogenic and osteogenic environment enabling bone formation.

No. of Pages : 6 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018664 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MODIFIED AND REDUCED THE TRAUMA IN FRACTURE SITE WITH STANDARD CLOSED FRACTURE LABORATORY ANIMAL BON

(51) International classification :A61L0027360000, C12N0005077500, A61K0031195000, A61B0017680000, A61B0017560000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)SENTHILKUMAR KRISHNAMOORTHI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)LAKSHMI THANGAVELU
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
Bone is a highly specialized dynamic connective tissue, which provides mobility, muscle attachment, protection to internal organs and participates in metabolic homeostasis. A bone fracture can be a complete or incomplete break in the anatomic continuity of bone that affects the mechanical stability of the bone. A fracture is also associated with injury to the surrounding soft tissues, including blood supply, and in most cases with compromised function of the locomotor system. Fracture is often accompanied by auto-activated healing involving many local and systemic growth factors, hormones, and extracellular matrix components. Animal bone fracture model created by Frank Bonnarens and Thomas A. Einhorn in 1984 by using new apparatus. We modified that fracture model apparatus to reduce the tissue injury on bone fracture sites in the animal. Fracture-associated vascular damage leads to hemorrhage and inflammation that culminates in the development of a hematoma. The undifferentiated MSCs from the fracture gaps migrate proliferate and form the granulation tissue. This tissue forms the nucleus for the subsequent healing process. The repair stage is characterized by the formation of callus, continued vascular in growth and the secretion of osteoid and collagenous fibers.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018665 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NEW CALCIUM SILICATE MATERIAL FOR VITAL PULP THERAPY

(51) International classification :A61K0031416400, A61K0006540000, C04B0028040000, A61F0002460000, A61C0005400000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NIKITHA SUZANNE VARGHESE
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)GANESH JEEVANANDAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This material is proposed to patent a silicate cement which has the superior properties of Biodentine and MTA which are the most commonly used materials for vital pulp therapy. Vital pulp therapy is a procedure which is done when only a part of the pulp is infected. It used to preserve the radicular portion of the pulp. This cement initiates dentin bridge formation and reduces inflammation. It also overcomes the shortcomings of Biodentine and MTA by reducing the setting time and increasing the opacity of the material. Metronidazole is added to act on the anaerobic bacteria which is commonly seen in root canals which reduces incidences of secondary infections.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018666 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MODIFIED GIC MIXING INSTRUMENT

(51) International classification :A61B0017020000, B65D0077240000, B01F0007000000, B65D0051240000, B01L0003180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1) SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1) NIKITHA SUZANNE VARGHESE
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2) VIGNESH R
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This design is proposed to patent an instrument to mix Glass lonomer cement which is the most common cement used in Pediatric dentistry. This proposed design has two ends, one end is shaped like a spoon and the other end is in the form of a spatula. The spoon end is used to scoop out the required amount of powder to be used for mixing. Whereas the other end, which is shaped as a spatula is used for the easy mixture of the cement. This instrument saves time of the operator and prevents usage of multiple instruments. This provides a hassle-free workspace for the operator. It is made up of plastic and weighs 100grams.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018667 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BIODEGRADABLE COLOR CODED SCYPHUS CUPS FOR BIOMEDICAL WASTE MANAGEMENT IN DENTAL CHAIR

(51) International classification :A61C0017060000, A61G0015100000, A61B0050360000, G06Q0050220000, A61G0015120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)P.JENCY EVANJELIN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)UMA MAHESHWARI T.N
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DR. DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
Biomedical waste generated in dental clinics and hospitals if not managed properly, can create various health hazards to dental professionals, dental auxiliaries, patients and other dental health care service providers who work in dental office.The best disposal options are prevention or minimize the toxic substances from dental clinics to the environment.Every concerned health personnel are expected to have proper knowledge, practice, and capacity to guide others for waste collection, proper handling techniques, and management. Dentists ■are encouraged to follow best management practices when disposing hazardous wastes. Disposing the dental waste after each dental procedure is difficult if they are scattered in the dental tray during the procedure with full of contaminated saliva to avoid this , it is better have a disposable Color coded cups attached to dental chair for easy accessibility and proper disposal.

No. of Pages : 7 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018668 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BIORESORSABLE SODIUM FLUORIDE MEDICATED GHEWING GUM FOR DENTINE HYPERSENSITIVITY

(51) International classification :A23G0004060000, A61B0005040000, G06Q0040020000, A61K0031355000, A61H0023040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)LAKSHMINARAYANAN ARIVARASU
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)THEIVA CHANDRAN RAJENDRAN
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
The currently produced chewing gums in the markets all over the world are either non-biodegradable • -so as it in its natural form can be either harmful to the surroundings as well as to the living organisms. The bioresorsable materials tend to be cohesive and it can be a product capable of delivering bioactive compounds which could be used for healing targeted parts. The fluoride incorporated MCG has faster onset of action is readily administrable anywhere and anytime.

No. of Pages : 5 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018669 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENHANCED ANTIBIOFILM EFFICIENCY OF SODIUM DOPED ZNO NANOPARTICLES BIOINK

(51) International classification :B33Y0070000000, C12Q0001020000, A01N0059160000, C30B0029160000, C07K0014195000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1) SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENC
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NIRMALYA TRIPATHY
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)PERUMAL ELUMALAI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
The main aim of this invention is to design mono-dispersed Na-doped ZnO nanoparticles (Na-ZnO NP, -10 nm) using a cost-effective, low-temperature route and formulated as bioink to obtain a thin film coating on glass for enhanced biofilm inhibition/disruption. The Na-ZnO bioink coated glass showed remarkable reductions in bacterial growth and biofilm formation especially upon ultraviolet (UV) activation by reducing recombination of electrons/holes as compared to the bare glass. The investigated mechanism reveals that the bioink integrated Na-ZnO NPs endow with large surface area, high reactivity and electron density, efficiently penetrate and photogeneration of intracellular reactive oxygen species inside bacteria, which eventually enhances lipid peroxidation and causes bacterial cell death. Highlighting superior efficacy of Na-ZnO over the bare ZnO NPs, these results promises wide applicability of Na-ZnO bioink in biomedical and industrial arena.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018680 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BITE BLOCK FOR PATIENTS WITH AN EDENTULOUS ARCH IN PANORAMIC IMAGING

(51) International classification :A61B0006140000, A61C0009000000, A61F0005560000, A61B0006000000, A61M0016040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1) SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)VISALACHI MR
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)JAYANTH KUMAR V
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
The quality of a panoramic radiograph depends on the accurate positioning of the patient within the focal trough. Most often seen errors in edentulous patients arc cither chin too high or too low, tongue not raised, head tilted or turned. It is difficult to orient edentulous patients in the coronal plane due to the absence of teeth. In such cases, we either place cotton rolls or chin-supported devices. These devices provide inaccurate image quality and patient, coronal position. The new bite block for edentulous patients is designed to bring reproducibility when taking panoramic radiographs to a similar level as that of a bite block for dentulous patients. Hence, we have designed a standardized position that could be attached to the existing bite block of the Orthopantomography machine to provide accurate coronal plane positioning, achieve interocclusal clearance, and maintain tongue position. This device consists of a horizontal component in which edentulous patients bite and it separates the maxilla from the mandible. A sleeve is present which can be attached to an existing bite block. A tongue elevator is seen which elevates and upholds the tongue to the roof of the palate.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018681 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PROBIOTICS AND ACAI BERRY GEL IN MANAGEMENT OF ORAL POTENTIALLY MALIGNANT DISORDERS

(51) International classification :G16B0020000000, G16H0050700000, A61K0035747000, A61K0031416400, A61K0035745000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)N. S. SHREE ABIRAAMI
Address of Applicant : SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)RAJESHKUMAR SHANMUGAM
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This novel pro-acai gel is a promising drug of choice for OPMDs, due to its dual antioxidant and antimicrobial properties. Studies have shown that extract in the gel can act as an anti-inflammatory agents. Probiotics are live microorganisms which when administered adequately can have beneficial effects on the host. There is an interest in the use of probiotics due to their minimal adverse effects, fight against pathogen by adhering in their binding site leading to aggregation. Probiotics are considered a safe drug and promotes betterment in patients' overall health. There are various studies in literature that have addressed case selection, study design and treatment limitations in management of opmds . In spite of the heterogenicity in the studies, there is a clinically significant impact by the usage of probiotics and acai berry extract in the management of opmds. It can be considered as prophylactic and adjuvant treatment for the management of opmds before prescribing medication for the patient.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018682 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DISPOSABLE CRESCENT SCALE FOR ORAL MUCOSAL LESIONS

(51) International classification :A61K0009000000, A61B0005107000, A61B0005053000, A61B0001240000, A61B0001060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DHANYA. M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2) UMA MAHESHWARI T.N
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This invention is to measure the size of the oral mucosal lesions of all clinical presentations such as swelling, bullae, vesicles, patches (red and white patches)Use of conventional scale to measure the lesions of the oral cavity present in buccal mucosa, palate, floor of the mouth, uvula ,retromolar region is difficult, as it causes discomfort and pain to the patients, and doesn't aid in accurate measurements of the lesion.This crescent scale is small, flexible, consisting of measurements ranging from 0-50 mm ;the crescent shape of the scale helps in easy insertion into the oral cavity and can aid in easy measure of the size of the lesion. The crescent scale consisting of calibrations from 0-50 mm,the crescent scale is curved at an angle of 70 degrees giving a crescent curved shape if the scale ,the diameter of the scale ranges from 0-10mm ,the scale is flexible and can be disposed after single use.The scale consists of a handle which is a small elevation protruding from the centre of the scale,cylindrical in shape with a diameter of 5 mm and length of 10 cm to aid in support to the crescent scale.Thus this helps in accurate measurement of the oral mucosal lesions and serves as an assessment tool during pre treatment and post therapeutic intervention of the oral mucosal lesions, it is made up of plastic and is easily disposed after single use.The measurements on the scale are calibrated

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018684 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ANTHOCYANIN-CURCUMIN PHOTOSENSITIZER GEL IN PHOTOBIOMODULATION THERAPY OF ORAL POTENTIALLY MALIGNANT

(51) International classification :A61N0005060000, A61K0041000000, A61K0049000000, C07K0016280000, A61K0033260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DHANYA. M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)UMA MAHESHWARI T.N
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
This study is an invention of a new photosensitizer that can be used in photobiomodulation therapy in treating oral potentially malignant disorders and oral cancers. This photosensitizer is a combination of Anthocyanin and curcumin into a single gel form which replaces the conventional photosensitizers(Methylene blue,5 ALA, phorphyrin) which are widely used, photosensitizer should have ideal properties of dark cytotoxicity, light cytotoxicity, selectivity to target cells, solubility to biological fluids, good absorption (incubation time to the oral epithelium), ROS production when excited by light of certain wavelength and eventually inducing phototoxic reactions against pathogens, During the photobiomodulation therapy there is singlet oxygen production ,which kills the targeted cells of the oral lesions, for good penetration of light, the use of photosensitizer should be absorbed well into the oral tissues, a light of 635 nm is essential in killing of targeted cells. In this study Curcumin has a wide range of therapeutic properties and has shown to induce strong photo cytotoxic effects in micromolar concentrations against a variety of cancer cells. Anthocyanin is extracted from the mother juice of punica granatum, which has a photo cytotoxic property and also acts as an antimicrobial against streptococcus mutans species. Thus the photobiomodulation therapy doesn't cause alterations of the oral microflora.After the in vitro studies of the anthocyanin-curcumin photosensitizer gel, it is used in the clinical trial in patients with oral potentially malignant disorders as a photosensitizer in photobiomodulation therapy.

No. of Pages : 6 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018686 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BITEFORK TO PREVENT TONGUE SHADOW DURING ORTHOPANTOMOGRAPHY

(51) International classification :A61B0006140000, A61B0001240000, A61B0006040000, A61B0090160000, A61B0006000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant : NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)INDUJA M
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
2)RAVLEEN NAGI
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------
3)DEEPAK NALLASAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, NO. 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA-600077. ---------- ----------

(57) Abstract :
An orthopantomogram (OPG) is a panoramic single image radiograph of the maxilla, mandible and the teeth and provides a convenient, inexpensive and rapid way to evaluate the gross anatomy of the jaws and related pathology. Correct positioning of patient in OPG machine is important for a sharp, accurate and undistorted image. OPG positioning errors are common affecting 60-96% of radiographs; rendering 5-33% difficult to interpret. The most common positioning error is shadow of tongue over the roots of maxillary teeth and this error occurs when tongue is not pushed against the hard palate. A non-diagnostic quality image leads to repetition of the radiograph and errors made by the operator during patient positioning have been found to affect the image quality. My proposed invention U-shaped bite fork device consists of a stem, prongs, bite plane and bite block made up in acrylic material. Bite block will enable the patient to keep his/her tongue in the proper resting position during exposure thereby preventing the tongue shadow seen as radiolucency over the roots of maxillary teeth. This technique will produce an ideal panoramic image free of distortion and superimposition of structures and will be helpful in identification of any dental or jaw pathology particularly above the maxillary teeth.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018690 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CALIBRATED TEFLON STRIPS FOR MEASURING CHEEK FLEXIBILITY

(51) International classification :A61K0036889000, G01B0003200000, A63B0023030000, D06H0007000000, G01B0003000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE
Address of Applicant :162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)P. JENCY EVANIELIN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
2)UMA MAHESHWARI T.N
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------
3)DEEPAK NALLASWAMY VEERAIYAN
Address of Applicant :SAVEETHA DENTAL COLLEGE AND HOSPITAL, 162, POONAMALLEE HIGH ROAD, CHENNAI, TAMILNADU, INDIA 600077. ---------- ----------

(57) Abstract :
Abstract: Oral submucous fibrosis is a potentially malignant disorder and was defined as an chronic insidious disease affecting any part of oral cavity particularly pharynx. Although occasionally preceded by and / or associated with vesicle formation, it is always associated with juxta epithelial inflammatory reaction followed by fibro - elastic changes in the lamina propria with epithelial atrophy leading to stiffness of oral mucosa causing trismus and inability to eat.OSMF is irreversible and persists even after cessation of areca nut chewing habit and the severity increases along with the duration of habit. Areca nut contains alkaloids and the arecoline in the alkaloids which I turn has the capacity to modulate MMPs , lysyl oxidases and collagenases all affecting the metabolism of collagen ,which leads to increased fibrosis. Due to fibrosis there will be inability to open the mouth , inability to protrude the tongue and decrease in cheek flexibility.During the management of patients with OSMF several parameters are being measured among them cheek flexibility is one of the parameter for which measuring with vernier caliper or a scale cannot be accurate. Precise measurement of cheek flexibility before and after treatment to find the improvement can be done with something flexible and stable on both the sides of the cheek. Previously to measure this threads and measuring tapes were used, which is difficult because at the same time one cannot measure on both the sides of the cheek from tragus of the ear to corner of the mouth , which will lead to inaccurate measurements. To avoid these discrepancies a variable strips made of Teflon which is color coded with measurements and a stickable end on one side for stability is constructed according to our design. This strips consist of measurements from 0 to 20 cm. In which 0,5,10,15,20 are color coded in violet color with a stickable end on the starting point. These strips can be used as 1 for each individuals with their name written on it and also the measured values can be marked in the strips during their initial visit using a marker and further measurements can be marked during further follow up.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018742 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVELOPMENT OF A ENERGY EFFICIENT STREET LIGHTING SYSTEM FOR SMART CITY

(51) International classification	:H04W0084180000, H05B0047190000, H05B0047160000, A61K0031090000, F21S0002000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Sree Venkateswara College of Engineering
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. P. Kumar Babu
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
2)Dr. V.Anil Kumar
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
3)Mrs.S.Narmadha
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
4)Mr. T. Srikanth
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
5)Mr. M.Malyadri
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
6)Mr. Y.V.Niranjan Kumar
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
7)Mr. K. Girish Kumar
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
8)Mr.O.Thireesh
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
9)Mr.N.Sudarshan Rao
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
10)Mr.SD.Liyakhath
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------
11)Mr.P.Ramesh
Address of Applicant :NH-5 Bypass Road, Golden Nagar, North Rajupalem, SPSR Nellore, Andhra Pradesh, India 524316. ---------- ----------

(57) Abstract :
More automated smart decision-making systems are required in today's human lifestyle to increase efficiency in both machines and humans. Modern transportation undergoes smart cars that can drive in an autonomous mode, as transportation is a keystone of civilisation. The world government has set a number of goals to achieve greater growth in the areas of automation, infrastructure, human health, and environmental safety. Build resilient infrastructure, promote equitable and sustainable industrialization, and support innovation are three of the Sustainable Development Goals #9's growth terms. Trespassers will be able to see the road because there are street lights installed. Such street lights, which were previously turned on and off manually, can now be controlled by a variety of sensors that sense the demand for light and communicate that need using Wireless Sensor Network Devices connected to an Aurdino Uno board to control the lighting process. This setup would identify the dawn and dusk to switch on the street lights. This can be further enhanced to improve the lighting capacity when there arevarying climatic conditions and provides enlarged scope for this system.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018759 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WARM BED MATTRESS AND A METHOD TO OPERATE THE SAME

(51) International classification :A61B0005000000, A61B0005010000, A61B0005110000, A61B0006000000, G05D0023190000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. N. G. P. INSTITUTE OF TECHNOLOGY
Address of Applicant :Dr. N. G. P. NAGAR, KALAPATTI ROAD, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1) Dr. PRABHA S U
Address of Applicant : PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
2)SUNDAR R
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
3)S. VIHAASINI
Address of Applicant :IIC MEMBER & UG STUDENT BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
4)VIGNESHWAR R
Address of Applicant :IIC MEMBER & UG STUDENT BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
5)VIJAYAKUMAR T
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
6)RAM KUMAR C
Address of Applicant : KAPILA & IIC CONVENER , DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------

(57) Abstract :
The present invention provides a temperature regulating apparatus for medical imaging machines to maintain patient body temperature during diagnosis. The medical imaging machine (1) consists of a scanner (4), a pallet (5), and a base (6) which is operated by a medical practitioner (2) to diagnose a user (3). A temperature regulating apparatus (11) is provided for maintaining user (2) body temperature during said diagnosis. Said temperature regulating apparatus (11) consists of a carbon nanotubes mattress (12), a cold air pump (13), a hot air pump (14), a suction pump (15), a temperature sensor unit (16), and a micro-controller (17). The method to maintain user body temperature by temperature regulating apparatus (11) in a medical imaging machine (1) consists of determining and comparing the temperatures. Based on the which transmitting signal to maintain an optimum temperature of carbon nanotubes mattress (12).

No. of Pages : 20 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018761 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CROP HEALTH MONITORING APPARATUS AND METHOD FOR GROWTH PREDICTION

(51) International classification :G06K0009000000, G06Q0050020000, G06T0007000000, A01G0007000000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. N.G.P. INSTITUTE OF TECHNOLOGY
Address of Applicant :Dr. N. G. P. NAGAR, KALAPATTI ROAD, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. PRABHA S U
Address of Applicant :PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
2)SHANMUGA RAJU S
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
3)KARTHICK R
Address of Applicant :IIC MEMBER & UG STUDENT ECE, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
4)HARISH KUMAR N
Address of Applicant :IIC MEMBER & UG STUDENT ECE, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
5)NITHYA DEVI S
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
6)RAM KUMAR C
Address of Applicant :KAPILA & IIC CONVENER , DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------

(57) Abstract :
The present invention provides an apparatus to monitor the crops in large agricultural lands and a method to predict the harvest period of cultivating crops. Said crop health monitoring apparatus (1) in a crop field (2) consists of a meteorological database (4), a plurality of sensors (11), a data hub (21), a data storage unit (31), and a handheld device (41). Said plurality of sensors (11), data hub (21), data storage unit (31), and handheld device (41) are connected through intranet connectivity. The method of crop health monitoring and growth prediction consists of data collection and capturing of crop images using a handheld device (41). Said collected data and image are analyzed through feature extract (46a) process, edge detection (46b) process, dataset evaluation (46c) process, data analysis (46d) process, and result & alert (47e) process. The analyzed result is displayed by the handheld device (41).

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018770 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A CONCRETE MIX PREPARATION USING BIOMEDICAL WASTE

(51) International classification	:A41D0013110000, A61B0005000000, A61M0016060000, A61B0050300000, B03B0009060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DR. N.G.P. INSTITUTE OF TECHNOLOGY
Address of Applicant :Dr. N. G. P. NAGAR, KALAPATTI ROAD, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. PRABHA S U
Address of Applicant :PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048PRINCIPAL & IIC PRESIDENT, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
2)SENTHIL RAJAN M
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
3)JHANANI S K
Address of Applicant :IIC STUDENT CO-ORDINATOR & UG STUDENT- CIVIL, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
4)DHABASREE G N
Address of Applicant :UG STUDENT - CIVIL, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
5)GUGAN I
Address of Applicant :IIC INNOVATION AMBASSADOR & ASSISTANT PROFESSOR/BME, DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------
6)RAM KUMAR C
Address of Applicant :KAPILA & IIC CONVENER , DR.N.G.P. INSTITUTE OF TECHNOLOGY, COIMBATORE, TAMILNADU, INDIA, 641048 ---------- ----------

(57) Abstract :
The present invention provides a process for the formulation of concrete with biomedical waste, particularly used face masks and medical wearable kit. Said concrete (1) consists of a mixture (2) and a biomedical waste consisting of a face mask and medical wearable kit (3) in form of fabric or fiber or chips are blended with the said mixture (2). Said face mask and medical wearable kit (3) fabric is shredded to a size of 0.5 centimeters in width and 2 centimeter in length. The concrete (1) is formulated by a process consisting of batching, sterilization and shredding, mixing, molding, and curing.

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018838 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Methods and systems for correcting skew in images

(51) International classification :G06K0009320000, G06K0009000000, H04N0001387000, G06T0003600000, G06K0009480000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Subex Assurance LLP
Address of Applicant :Subex Assurance LLP, 4th Floor Pritech Park, Bellandur, Varthur Hobli, Bangalore 560103, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Shashank Shekhar
Address of Applicant :N5133, Prestige Sunrise Park Norwood, Neo Town Road, Electronic City Phase 1, Bangalore 560100, India ---------- ----------
2)Asif Salim
Address of Applicant :Padinjarekarayil, Keerikodu, Thodupuzha East, Idukki, Kerala, 685585, India ---------- ----------
3)Mrinal Haloi
Address of Applicant :HN101, Paschim Barpit, Haribhanga, Nalbari, Assam – 781378, India ---------- ----------
4)Sai Trinath Dubba
Address of Applicant :House No: 13, MIG-2, KPHB 9th Phase, Kukatpally, Hyderabad, Telangana 500085, India ---------- ----------

(57) Abstract :
ABSTRACT METHODS AND SYSTEMS FOR SKEW CORRECTION IN IMAGES Embodiments herein disclose techniques for skew correction in images. An electronic device is configured to output at least one image with rotated bounding boxes that bound over text contents within image. Angles between the orientation of the rotated bounding boxes and a horizontal axis are determined and rotated images are obtained. Coordinates of one of four corners of each of the rotated bounding boxes in the rotated images are computed. The rotated images are divided into a plurality of vertical segments. Box distributions of each of the rotated images are determined and number of the rotated bounding boxes with the coordinates falling within each of the plurality of vertical segments are computed. The correct de-skewed image is outputted based on the box distributions. FIG. 6

No. of Pages : 31 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018982 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SOLID LIPID NANOPARTICLES FOR DRUG DELIVERY

(51) International classification :A61K0009510000, A61K0047690000, C12Q0001688600, A61K0008370000, A61K0008110000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Y.Ganesh Kumar
Address of Applicant :Associate Professor & HOD ,Department of Pharmaceutics,KVK College of Pharmacy ,Surmaiguda (v) ,Abdullapurmet (M) ,R.R Dist ,TS,India -501512 ---------- ----------
2)V.Anusha
3)Dr.Damayanthi Dalu
4)Dr.Satyabrata Bhanja
5)Dr.B.Raj Kumar
6)Pooja Agarwal
7)P.Sathya Sowmya
8)Mr.Chandan Nayak
9)Mr.Kahnu Charan Panigrahi
10)Dr.Goutham Kumar Jena
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Y.Ganesh Kumar
Address of Applicant :Associate Professor & HOD ,Department of Pharmaceutics,KVK College of Pharmacy ,Surmaiguda (v) ,Abdullapurmet (M) ,R.R Dist ,TS,India -501512 ---------- ----------
2)V.Anusha
Address of Applicant :Assistant Professor ,Department of Pharmaceutics KVK College of Pharmacy ,Surmaiguda (v) ,Abdullapurmet (M) ,R.R Dist ,TS,India -501512 ---------- ----------
3)Dr.Damayanthi Dalu
Address of Applicant :Associate Professor , Department of Pharmacology, MRM College of Pharmacy, Chintapallyguda (V), Ibrahimpatnam, Rangareddy,-501510 - ---------- ----------
4)Dr.Satyabrata Bhanja
Address of Applicant :Professor & Principal, RITEE College of Pharmacy, NH-6, Chhatauna, Mandir Hasaud, Raipur, Chhatisgarh,492101 ---------- ----------
5)Dr.B.Raj Kumar
Address of Applicant :Associate Professor &Vice Principal, Moonray Institute of pharmaceutical sciences, Raikal Village Shadangar, Farooq Nagar, Mndl, R.R Dist, Telangana State -509202 ---------- ----------
6)Pooja Agarwal
Address of Applicant :Research Scholar, Anurag University ,Venkatapur (V) ,Ghatkesar (M) ,Medchal (D),Hyderabad ,Telangana ,500088 ---------- ----------
7)P.Sathya Sowmya
Address of Applicant :Associate Professor, Sri Krishnadevaraya University College of Pharmaceutical Sciences, Akuthotapalli, SV Puram, Anantapur, Andhra Pradesh ---------- ----------
8)Mr.Chandan Nayak
Address of Applicant :Assistant Professor, School of Pharmaceutical Education & Research, Berhampur University, Odisha ---------- ----------
9)Mr.Kahnu Charan Panigrahi
Address of Applicant :Associate Professor ,Gayatri Institute of science and technology ,Affiliated to Biju Patnaik University of Technology ---------- ---------- -
10)Dr.Goutham Kumar Jena
Address of Applicant :Associate Professor ,Roland institute of Pharmaceutical Sciences ,Affiliated to Biju Patnaik University of Technology ---------- ----------

(57) Abstract :
SOLID LIPID NANOPARTICLES FOR DRUG DELIVERY ABSTRACT A method for preparation of formulating a composition of Solid Lipid Nanoparticles (SLNs) has been disclosed. due to thecost-efficient, proportionally increasable, and reproducible preparation of SLN and the avoidance of organic solvents used, the warm microemulsion quenching method was selected from among severalpreparation methods for development in this research. FIG 1: METHOD OF PREPARATION OF SOLID LIPID NANOPARTICLES

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241018983 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Fog computing technologies based implementation of modern educational systems using Machine Learning Algorithms

(51) International classification	:H04L0012240000, G06F0011300000, H04N0007180000, G06F0011000000, H04Q0003000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr M SADISH SENDIL
Address of Applicant :Professor and Head Department of Emerging Technologies Guru Nanak Institute of Technology Ibrahimpatnam Ranga Reddy District 501506 Telangana ---------- ----------
2)Deepika sirmoria
3)Subhashini S
4)Dr. S. Saravanan
5)E. Joel Anandraj
6)Dr. Brijesh Sathian
7)Dr.Sreejith Vignesh B P
8)SARAVANAN R
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr M SADISH SENDIL
Address of Applicant :Professor and Head Department of Emerging Technologies Guru Nanak Institute of Technology Ibrahimpatnam Ranga Reddy District 501506 Telangana ---------- ----------
2)Deepika sirmoria
Address of Applicant :Assistant professor AI Department Anurag University, Ghatkesar Telangana ---------- ----------
3)Subhashini S
Address of Applicant :Assistant Professor Computer Science and Engineering Department BSA Crescent Institute of Science and technology ,Vandalur,Chennai - 600048 ---------- ----------
4)Dr. S. Saravanan
Address of Applicant :Assistant professor & Research Guide, PG and Research Department of commerce, Dr. Ambedkar Government Arts College,(Autonomous, Affiliated to University of Madras) vyasarpadi, chennai-600039 ---------- ----------
5)E. Joel Anandraj
Address of Applicant :Assistant Professor Dept of Information Technology KGISL Institute of Technology B6-5 Bhagavan Garden, TN Palayam,Jothipuram post, Coimbatore -47 ---------- ----------
6)Dr. Brijesh Sathian
Address of Applicant :Scientist, Geriatrics and Long term care Department, Rumailah Hospital, Hamad Medical Corporation, Doha, Qatar, P. O BOX 3050, Doha, Qatar ---------- ----------
7)Dr.Sreejith Vignesh B P
Address of Applicant :Assistant Professor & Head - I.T. Sri Krishna Adithya College of Arts and Science Tamilnadu ---------- ----------
8)SARAVANAN R
Address of Applicant :Assistant Professor, Department of CSA, SCSVMV deemed to be university, Kanchipuram, Tamilnadu ---------- ----------

(57) Abstract :
Fog computing technologies based implementation of modern educational systems using Machine Learning Algorithms Abstract: The term fog computing architecture refers to a system that is spread out over a large area. This architectural arrangement's primary focus is on physical and logical network elements, as well as software, in order to implement a proper network that can function properly. Data can be stored efficiently while also allowing users to communicate in a flexible manner using the fog computing architecture. The ability of fog computing architecture to run in real time, on the other hand, has gained significant traction in education. With this research, we hope to conduct a thorough review on fog computing in educational systems. It will be investigated from the standpoints of limitations and findings associated with these technologies.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2022

(21) Application No.202241019072 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD OF PROCESSING CYANIDIN-3-GLUCOSIDE FROM RED TAMARIND AND METHOD OF USE THEREOF

(51) International classification :A61K0031704800, A61K0008970000, A61K0036480000, G01N0030000000, A23D0009007000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Director, Institute of Forest Genetics and Tree Breeding (IFGTB)
Address of Applicant :Institute of Forest Genetics and Tree Breeding, Cowley Brown Road, Forest Campus, R.S Puram, Coimbatore District, Tamil Nadu State, Pin code-641 002 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. N. Senthilkumar
Address of Applicant :Scientist-F Institute of Forest Genetics and Tree Breeding, Cowley Brown Road, Forest Campus, R.S Puram, Coimbatore District, Tamil Nadu State, Pin code-641 002. ---------- ----------
2)Dr. D.Suresh Babu
Address of Applicant :Research Associate Institute of Forest Genetics and Tree Breeding, Cowley Brown Road, Forest Campus, R.S Puram, Coimbatore District, Tamil Nadu State, Pin code-641 002. ---------- ----------
3)Smt.R.Sumathi
Address of Applicant :Chief Technical Officer Institute of Forest Genetics and Tree Breeding, Cowley Brown Road, Forest Campus, R.S Puram, Coimbatore District, Tamil Nadu State, Pin code-641 002 ---------- ----------
4)Mr. A. Mayavel
Address of Applicant :Scientist-D, Chief Technical Officer Institute of Forest Genetics and Tree Breeding, Cowley Brown Road, Forest Campus, R.S Puram, Coimbatore District, Tamil Nadu State, Pin code-641 002 ---------- ----------

(57) Abstract :
METHOD OF PROCESSING CYANIDIN-3-GLUCOSIDE ANTHOCYANIN FLAVONOID COMPOUND FROM RED TAMARIND AND METHOD OF USE THEREOF The present invention discloses about the biologically potent flavonoid compound cyanidin-3-glucoside was isolated from the unripe fruit of Tamarindus indica (Red variety) by a method of activated silica gel G (60-120 mesh) column chromatography. Based on the solvent nature the crude extracts obtained gave better antioxidant activity which mainly coincident with secondary metabolites quantity. The methanol-HCl (0.01%) extract engaged through the activated silica gel G column chromatography with sequential changes in the mobile phase from low to high polar solvents. This successive mobile phase is lying behind the compound separation from the complex group of crude anthocyanins. The methanol-HCl (0.01%): water (95:5) fractions eluted from silica gel column chromatography yield cyanidin-3-glucoside better from methanol-HCl (0.01%) extract of T. indica (Red variety). Tara red mixed fruit jam containing natural colourant cyanidin-3-glucoside retains its colour even after the finished product was exposed to different temperature and light regimes for 6 months time period.

No. of Pages : 39 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019214 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Use of 5G IoT network to handle moving objects in a smart environment

(51) International classification :H04L0029080000, H04W0004700000, G05D0001020000, G06K0009000000, H04L0012280000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.K.S.Yamuna
Address of Applicant :Assistant Professor, Department of Electrical & Electronics Engineering, Sona College of Technology, Salem- 636005, Tamilnadu, India ---------- ----------
2)Mr. SABAREESHWARAN.K
3)Pushpalatha N
4)Dr.B.KARTHIKEYAN
5)Dr.C.Muniraj
6)R.Balakrishnan
7)Mr.M.Vetrivel
8)Mr.V.Mani
9)Dr.GUNAPRIYA DEVARAJAN
10)Dr.T.KOKILAVANI
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.K.S.Yamuna
Address of Applicant :Assistant Professor, Department of Electrical & Electronics Engineering, Sona College of Technology, Salem- 636005, Tamilnadu, India ---------- ----------
2)Mr. SABAREESHWARAN.K
Address of Applicant :Assistant Professor, Department of Electrical & Electronics Engineering, Karpagam Institute of Technology, Coimbatore,Tamilnadu- 641105 ---------- ----------
3)Pushpalatha N
Address of Applicant :Associate Professor, Department of Electrical and Electronics Engineering, Sri Eshwar College of Engineering, Coimbatore – 641 202 ---------- ----------
4)Dr.B.KARTHIKEYAN
Address of Applicant :Associate Professor, Department of Electrical and Electronics Engineering, Sri Krishna College of Engineering And Technology, Kuniyamuthur, Coimbatore, Tamilnadu-641008. ---------- ----------
5)Dr.C.Muniraj
Address of Applicant :Professor &Head, Department of Electrical and Electronics Engineering, Knowledge Institute of Technology, Kakapalayam, Tamilnadu - 637504 ---------- ----------
6)R.Balakrishnan
Address of Applicant :Assistant Professor, Department of Robotics and Automation Engineering , Veltech Multitech Dr Rangarajan Dr Sakunthala Engineering College, Veltech Road,Vel Nagar,Avadi, Chennai-600062 ---------- ----------
7)Mr.M.Vetrivel
Address of Applicant :Research Scholar, SONA COLLEGE OF TECHNOLOGY, SALEM ---------- ----------
8)Mr.V.Mani
Address of Applicant :Department of Computer Science and Engineering, M.Kumarasamy College of Engineering, Thalavapalayam, karur-639 113 ---------- ----------
9)Dr.GUNAPRIYA DEVARAJAN
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Sri Krishna College of Engineering and Technology, Kuniyamuthur, Coimbatore,Tamil Nadu-641008 ---------- ----------
10)Dr.T.KOKILAVANI
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Sri Krishna College of Engineering and Technology,Kuniamuthur, Coimbatore, Tamilnadu-641008. ---------- ----------

(57) Abstract :
[05] Developing intelligent systems that take into account the economic, environmental and security factors of modern society are one of the main challenges of this century. Advances in the fields of mobile robots, control architectures, artificial intelligence, advanced technologies, and computer vision now give us a glimpse of a future of intelligent environment. The rise of connected objects known as the Internet of Things (IoT) will rival the technological wonders of the past. This disclosure presents an IoT network of time-synchronous communication and the use of absolute time of day and a navigation/protection mechanism by various objects to navigate freely, without interference or collision in an intelligent environment.

No. of Pages : 29 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2022

(21) Application No.202241019232 A

(43) Publication Date : 15/04/2022

(54) Title of the invention : AUTOMATIC TRAFFIC CLEARANCE SYSTEM FOR AMBULANCE & FIRE SERVICE VEHICLE USING IOT TECHNIQUES.

(51) International classification	:A61B0005024000, A61G0003000000, G01C0021340000, A61B0005180000, A62C0027000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**

1)PRABHU MYLSAMY

Address of Applicant :11F,Savithri Nagar Chetty Street Coimbatore-641001. ---------- ----------

2)Dr. G. MADASAMY RAJA

3)M. BABYLATHA

4)Dr.J.JOSHUA GNANA SEKARAN

5)Dr.A.PUNITHA

6)S. RAJESH

7)Dr.C.RAJARAVI

8)Dr.M.REJI

9)Dr B MEENAKSHI

10)P.KALAAMANI

Name of Applicant : NA

Address of Applicant : NA

(72)**Name of Inventor :**

1)PRABHU MYLSAMY

Address of Applicant :11F,Savithri Nagar Chetty Street Coimbatore-641001. ---------- ----------

2)Dr. G. MADASAMY RAJA

Address of Applicant :Professor Department of Information Technology Paavai Engineering College, Namakkal,Tamilnadu. ---------- ----------

3)M. BABYLATHA

Address of Applicant :Assistant Professor (SG) Department of Information Technology Paavai Engineering College, Namakkal,Tamilnadu. ---------- ----------

4)Dr.J.JOSHUA GNANA SEKARAN

Address of Applicant :Prof & Principal Department of Mechanical Engineering CSI College of Engineering,Ketti Valley, Ooty, The Nilgiris-643215 ---------- ----------

5)Dr.A.PUNITHA

Address of Applicant :Professor Department of Mechatronics Engineering M.A.M school of Engineering,Trichy-Chennai Trunk Road, Trichy - 621105 ---------- ----------

6)S. RAJESH

Address of Applicant :Associate Professor Department of Information Technology Paavai Engineering College, Namakkal,Tamilnadu ---------- ----------

7)Dr.C.RAJARAVI

Address of Applicant :Associate Professor Department of Mechanical Engineering , Park College of Engg & Tech,Coimbatore, Tamilnadu ---------- ----------

8)Dr.M.REJI

Address of Applicant :Associate Professor Department of Electronics and Communication Engineering,Rohini College of Engineering and Technology,palkulam Kanyakumari dist ---------- ----------

9)Dr B MEENAKSHI

Address of Applicant :Professor Dept of Electrical and Electronics Engineering Sri Sairam Engineering college, sai Leo nagar, Chennai -44 ---------- ----------

10)P.KALAAMANI

Address of Applicant :Assistant Professor Dept of Computer Science & Engineering Karpagam College of Engineering,Coimbatore,Tamilnadu. ---------- ----------

(57) Abstract :

Now a days Ambulance and the fire engine vehicles plays an very important role in our society in recovering the life of the persons, while they get affected.In this patent am focussed on Patient health monitoring with vehicle tracking through GPS system.Also am addressing the day to day issues faced by the Ambulance driver and the fire engine driver during driving.The very important issue faced by the ambulance and fire engine is the Road traffic.Majority of the persons in our society are not following the traffic rules and regulations, eventhough during emergency vehicle crossing.To overcome this realtime issues this patent is taken into consideration.In this Invention IOT based traffic clearance system can be placed in the road signal through the control room.In the vehicles GPS system will be provided,vehicles can be located easily by using Vehicle Tracking system by the hospital authority with the help of Longitude & Latitude.Various health parameters of the patient can be monitored such as heartbeat rate,pulse rate,Oxygen rate and temperature. Text message containing the location and values of all the sensors and patient health is sent to a Hospital.Based on these parameters, the doctor can do the necessary preparation for the treatment of the patient.Also another text message sent to the control room based on that traffic can be cleared through the roads with the help of siren and cameras.While Ambulance vehicle is going to cross at that time the persons who travelling in the road should maintain their vehicle in leftside track of the road,if they are not following with the help of cameras the vehicle number has been captured and the fine can be issued for the defauletrs.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019356 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN IIOT AND AI-BASED FAULT DETECTION AND MITIGATION OF INDUSTRIAL PLANTS TO ENHANCE THE PRODUCTIVITY

(51) International classification :H04L0029080000, G05B0023020000, G05B0009020000, E21B0041000000, H04L0012260000
(86) International Application No :PCT//
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Filing Date :NA

(71)**Name of Applicant :**
1)Dr. A. BALAMURUGAN
Address of Applicant :Assistant Professor, Department of Physics, Government Arts and Science College, Avinashi – 641654, Tamilnadu. ---------- ----------
2)Dr. S. GNANAPRIYA
3)Dr. S. KAVIPRIYA
4)Dr. M. SENTHILKUMAR
5)Mrs. M. SAVITHA
6)Ms. S. JEYVARSHA
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. A. BALAMURUGAN
Address of Applicant :Assistant Professor, Department of Physics, Government Arts and Science College, Avinashi – 641654, Tamilnadu. ---------- ----------
2)Dr. S. GNANAPRIYA
Address of Applicant :Assistant Professor, Department of Computer Science, Kovai Kalaimagal College of Arts and Science, Vellimalaipattinum ,Narasipuram (Post), Coimbatore- 641109, Tamilnadu. ---------- ----------
3)Dr. S. KAVIPRIYA
Address of Applicant :Assistant Professor, Department of Computer Applications, Nehru College of Management, T. M. Palayam (Post), Coimbatore- 641105, Tamilnadu. ---------- ----------
4)Dr. M. SENTHILKUMAR
Address of Applicant :Assistant Professor, Department of Computer Science, Government Arts and Science College, Avinashi – 641654, Tamilnadu. ---------- ----------
5)Mrs. M. SAVITHA
Address of Applicant :Assistant Professor, Department of Computer Applications, Vidyasagar College of Arts and Science, Udumalpet, Tamilnadu. ---------- ----------
6)Ms. S. JEYVARSHA
Address of Applicant :Student, Department of Electrical and Electronics Engineering, VIT Chennai Campus, Chennai- 600127, Tamilnadu. ---------- ----------

(57) Abstract :
The aim of the invention is to develop an IIOT and AI-based fault detection and mitigation of industrial plants to enhance the productivity. The invention comprising the industrial plant, process zones, detectors and counters, timer, indicators, unit/local controller, IoT cloud, AI controller and display unit. Detectors & counters are fixed at each zone and time for processing at each zone is measured through the timer. All the controlling elements such as detectors and counters, timer, indicators have been integrated with the local controller and the cloud through the IIOT. The AI controller and display unit comprises of the AI controller uses the artificial control techniques through which the decision has been made and the display unit in which the status of the processes has been displayed to the operator. Data has been transferred to Unit Controller then the Signal Transfer from Unit Controller to IIOT cloud. Further the same data is transmitted to the Main Controller. The AI Controller Processing these Data and identify the Status. It identifies the fault and based on problems, it searches for the potential root causes and suggested the recommended solution to sort out the problem. The AI controller uses the table which has the different header like Location/Zone, Group Problem, Causes and Recommended Solution. It transmits the signal to the unit controller through IIOT and cloud and warned the zone where the fault has been occurs. The entire arrangement of the invention ensures the quick and easy fault identification and mitigation methodology and also ensures the consistency in the productivity of the plant.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019424 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : REINFORCEMENT MACHINE LEARNING BASED APPROACH TO FIND A UNKOWN TARGET IN UNKNOWN AREA USING MOBILE SENSOR NODE (MSN)/ROBOT EQUIPPED WITH GLOBAL POSITIONING SYSTEM (GPS).

(51) International classification	:H04W0084180000, G06N0020000000, G06K0009660000, G06N0003080000, G05D0001120000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Shylesha Channapattana
Address of Applicant :KLS Vishwanathrao Deshpande Institute of Technology, Haliyal,Karnataka ---------- ----------
2)Dr.Mininath K. Nighot
3)Dr. Nilesh P. Bhosale
4)Dr. Sanjay S. Badhe
5)Dr. Sushen R. Gulhane
6)Mr. Navnath B. Pokale
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Shylesha Channapattana
Address of Applicant :KLS Vishwanathrao Deshpande Institute of Technology, Haliyal,Karnataka ---------- ----------
2)Dr.Mininath K. Nighot
Address of Applicant :B-404,MSR, Olive Dattanagar, Ambegaon (Bk), Jambhulwadi Road, Katraj, Pune ---------- ----------
3)Dr. Nilesh P. Bhosale
Address of Applicant :Flat No. 502, I Wing, Hubtown Countrywoods, Kobdhava, Pune 411048 ---------- ----------
4)Dr. Sanjay S. Badhe
Address of Applicant :Flat A-203,Tulsivandan Apartment,Sector6,Moshi Pradhikaran, PCNTDA, Pune-412105 ---------- ----------
5)Dr. Sushen R. Gulhane
Address of Applicant :Flat No. 13,B4 wing Darshan Nagari, Chinchwad Pune-411033 ---------- ----------
6)Mr. Navnath B. Pokale
Address of Applicant :B-208, Blue Springs, Ambegaon Kurd, Near Telco Colony, Dattanagar, Jambhulwadi Rd, Pune-411046 ---------- ----------

(57) Abstract :
Now a days Reinforcement Machine Learning, is being popular because the agent learns automatically using feedbacks without any labeled data. Reinforcement Learning is widely used in applications like gaming, searching, finding targets, robotics, driverless cars. It can be used in Wireless Sensor Network (WSN) to find the target. WSN has two types of nodes: Static Sensor Node (SSN) and Mobile Sensor Node (MSN). To find target by blind MSN in unknown area is a complex problem. A Reinforcement Learning based approach is proposed to find a target whose location is unknown. GPS (Global Positioning System) enabled group of MSNs with local Communication and coordination with each other, searches a target with a shortest path.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019567 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MACHINE LEARNING BASED IRRIGATION SYSTEM THROUGH IMPLEMENTING THE PLANT LEAVES IMAGES TO ENHANCE AGRICULTURAL PRODUCTION

(51) International classification :G06K0009620000, G06T0007000000, H04N0001000000, A01G0025160000, G06K0009660000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Lokanayaki Karnan
Address of Applicant :Assistant Professor, Department of Computer Applications, Dayananda Sagar University, Bangalore, Karnataka ---------- ----------
2)Dr. S. B. Mahalakshmi
3)Shaurya Deep
4)Dr. Sheshang Degadwala
5)Franklin ORE ARECHE
6)Dr. Richa Vijay
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Lokanayaki Karnan
Address of Applicant :Assistant Professor, Department of Computer Applications, Dayananda Sagar University, Bangalore, Karnataka ---------- ----------
2)Dr. S. B. Mahalakshmi
Address of Applicant :Assistant Professor, Department pf Artificial Intelligence & Machine Learning, Coimbatore Institute of Technology, Coimbatore - 641014, Tamil Nadu, India ---------- ----------
3)Shaurya Deep
Address of Applicant :Assistant Professor, IIMT College of Management, Greater Noida, U.P. ---------- ----------
4)Dr. Sheshang Degadwala
Address of Applicant :Associate Professor , Sigma Institute of Engineering, Engineering Block, Sigma Group of Institutes, Ajwa-Nimeta Road, Bakrol, Vadodara, Gujarat - 390019, India ---------- ----------
5)Franklin ORE ARECHE
Address of Applicant :Teacher, Academic Department of Agricultural Sciences, National University of Huancavelica, Huancavelica, Peru ---------- ----------
6)Dr. Richa Vijay
Address of Applicant :Assistant Professor, MRIIRS, Manav Rachna University Faridabad, Harayana ---------- ----------

(57) Abstract :
The present invention relatesmachine learning based irrigation system through implementing the plant leaves images to enhance agricultural production.The drone is flying in the farm area with the help of routing algorithm and drone having high resolution camera for capturing live images of plant leaves, on the drone fixed Wi-Fi module it provide connection between transmitter and receiver, with the help of arduino board image processing is done, Image processing consist of the phases namely image preprocessing, feature extraction, training by SVM, classification and matched trained images with data base images if irrigation is identified then provide message to farmer using android application and finally irrigation take place by machine learning.

No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019669 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Innovative Block Chain Based Framework for Financial Product Management

(51) International classification :G06Q0040060000, G06Q0040020000, G06Q0030000000, H04L0029060000, G06F0021600000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Shetty Deepa Thangam Geeta
Address of Applicant :Assistant Professor, School of Management Studies Department, Sathyabama lnstitute of Science and Technology, Chennai, Tamil Nadu - 600119 ---------- ----------
2)Dr. SP. Mathiraj
3)Dr. K. Karthick
4)A. Nithyakarpagam
5)M.Mala
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Shetty Deepa Thangam Geeta
Address of Applicant :Assistant Professor, School of Management Studies Department, Sathyabama lnstitute of Science and Technology, Chennai, Tamil Nadu - 600119 ---------- ----------
2)Dr. SP. Mathiraj
Address of Applicant :Professor, Corporate secretaryship Department, Alagappa university, Karaikudi, Tamilnadu - 630003 ---------- ----------
3)Dr. K. Karthick
Address of Applicant :Assistant Professor, Business Administration Department, Nachiyappa Swamigal Arts and Science College, Karaikudi, Tamilnadu - 630003 : ---------- ----------
4)A. Nithyakarpagam
Address of Applicant :Research Scholar, Corporate Secretaryship Department, Alagappa university, Karaikudi, Tamilnadu - 630003 ---------- ----------
5)M.Mala
Address of Applicant :Research Scholar, Corporate Secretaryship Department, Alagappa university, Karaikudi, Tamilnadu - 630003 ---------- ----------

(57) Abstract :
We propose a blockchain-based financial product management platform to reduce delays in updating financial product information across many institutions, handle multi-dimensional and diverse financial product information, and improve the ability to trace back attributes. It creates a distributed network architecture for managing financial product information resistant to tampering, transparent, and secure. Using Hyperledger Fabric as the underlying architecture, we developed a management platform that implemented the essential financial product's activities. For example, routine financial product maintenance, multi-function data enquiry, and financial product traceability. We have proposed a follow-up plan to improve Hyperledger Fabric's vulnerabilities to strengthen our management platform according to financial product management characteristics.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019670 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMPARATIVE ANALYSIS DEEP LEARNING TECHNIQUES TO IDENTIFY PRIME FACTORS FOR HANDLING STRATEGIC AND CRISIS MANAGEMENT

(51) International classification :G06Q0010060000, G06N0003040000, G06K0009620000, G06N0003080000, H04N0021810000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr Hikmat Rashed Sultan
Address of Applicant :Dr. Hikmat Rashed Sultan Professor, Dean of Business and Administration Collage, Nawroz University, Duhok, Kurdistan Region, Iraq, 420001 ---------- ----------
2)Bilal Hikmat Rasheed
3)Dr. D. Yuvaraj
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Hikmat Rashed Sultan
Address of Applicant :Dr. Hikmat Rashed Sultan Professor, Dean of Business and Administration Collage, Nawroz University, Duhok, Kurdistan Region, Iraq, 420001 ---------- ----------
2)Bilal Hikmat Rasheed
Address of Applicant :Bilal Hikmat Rasheed Assistant Lecturer, Department of Computer science, Cihan University – Duhok, Duhok, Kurdistan Region, Iraq, 420001 ---------- ----------
3)Dr. D. Yuvaraj
Address of Applicant :Assistant professor department of computer science, cihan university-Duhok, Kurdistan Region, Iraq ---------- ----------

(57) Abstract :
Comparative analysis deep learning techniques to identify prime factors for handling strategic and crisis management is the proposed invention. The invention focuses on implementing deep learning algorithms to identify the important factors that are directly impacting the crisis management of an organization. The invention will help revolutionize the crisis management with strategic planning.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019683 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR GENERATING HIGHLIGHTS OF MEDIA CONTENT

(51) International classification :H04N0021845000, H04N0021234000, H04N0021840000, H04N0021430000, G06F0016410000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)TATA ELXSI LIMITED
Address of Applicant :ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)LIPIKA SREEDHARAN
Address of Applicant :TATA ELXSI LIMITED, ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------
2)JAGAN SESHADRI
Address of Applicant :TATA ELXSI LIMITED, ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------
3)ANUP SRIMANGALAM SOMASEKHARAN NAIR
Address of Applicant :TATA ELXSI LIMITED, ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------
4)BISWAJIT BISWAS
Address of Applicant :TATA ELXSI LIMITED, ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------

(57) Abstract :
A system and associated method for accurately generating summaries of media content belonging to different types of genres is provided. The method includes receiving a media file (109) including an entire media content and selecting a first segment of the media content from an opening segment of the media file (109) and a second segment of the media content from a closing segment of the media file (109). Further, the method includes determining text, audio, and video parameters from the first segment and the second segment. Additionally, the method employs a genre identification system (116) that identifies a genre of the media content as a reality show or as one of other genres based on whether the determined text, audio, and video parameters adhere to a first set of rules. A new media file including the summary of the media content is generated based on the identified genre.

No. of Pages : 81 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019701 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Android Document Sharing System using Blockchain Technology

(51) International classification :H04L0029080000, H04L0009320000, H04L0009060000, H04L0029060000, G06F0021620000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mr Ghangesh Gunaseelan
Address of Applicant :AI & OPS Architect, Information Systems Master peace Technologies, Coimbatore-641006 ---------- ----------
2)Dr. D. Surya prabha
3)Dr. V.Kannan
4)Dr. Shailaja
5)Dr. Nagaraj B Patil
6)Dr G Prasanna Kumar
7)Dr.S.Dhanasekaran
8)Dr. Mahammad Idrish I. Sandhi
9)Dr.S Sankara Narayanan
10)Dr.V. Anjana Devi
11)Dr. R. Eswaramoorthi
12)Mr.T.Venketbabu
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr Ghangesh Gunaseelan
Address of Applicant :AI & OPS Architect, Information Systems Master peace Technologies, Coimbatore-641006 ---------- ----------
2)Dr. D. Surya prabha
Address of Applicant :Assistant Professor, Department of Computer Applications, Nehru Arts and Science College, Coimbatore-641105 ---------- ----------
3)Dr. V.Kannan
Address of Applicant :Managing director, CLDC Research and Development No.997, Mettupalayam Road, Near X-Cut Signal,R.S.Puram, Coimbatore-641002 ---------- ----------
4)Dr. Shailaja
Address of Applicant :Assistant Professor , Computer Science and Engineering, Poojya Doddappa Appa College of Engineering , Kalaburagi ---------- ----------
5)Dr. Nagaraj B Patil
Address of Applicant :Principal, Computer Science and Engineering, Government Engineering College , Gangavathi ---------- ----------
6)Dr G Prasanna Kumar
Address of Applicant :Associative professor,ECE, Malla Reddy Engineering College, Hyderabad-500100 ---------- ----------
7)Dr.S.Dhanasekaran
Address of Applicant :Associate Professor, IT, Kalasalingam Academy of Research and Education (Deemed to be University), Srivilliputtur ---------- ----------
8)Dr. Mahammad Idrish I. Sandhi
Address of Applicant :Associate Dean, Associate Professor & Head, MCA, Sankalchand Patel College of Engineering, Sankalchand Patel University, Visnagar-384 315 ---------- ----------
9)Dr.S Sankara Narayanan
Address of Applicant :Associate Professor, CSE , Vel Tech Rangarajan Dr Sagunthala R & D Institute of Science and Technology, Chennai ---------- ----------
10)Dr.V. Anjana Devi
Address of Applicant :Associate Professor , CSE, St. Joseph's College of Engineering, Chennai ---------- ----------
11)Dr. R. Eswaramoorthi
Address of Applicant :Associate Professor, ECE, K. S. R College of Engineering, Tiruchengode-637215 ---------- ----------
12)Mr.T.Venketbabu
Address of Applicant :Assistant professor, CSE, Sathyabama Institute of science and technology, Chennai ---------- ----------

(57) Abstract :
Android Document Sharing System using Blockchain Technology ABSTRACT: Storj, a distributed cloud storage service, and the rise of bitcoin have all aided in the recent growth of blockchain technology. To accelerate file sharing, the Blockchain concept could be integrated with other technologies. If you transfer a file to someone on the Blockchain network, you do not need to upload it to a computer and subsequently download it. This eliminates the need for the two-step approach. There are various file-sharing applications available, but none of them can compete with the one built on Blockchain technology in terms of security. Our major objective is to establish a private Blockchain network that small businesses may utilise to transmit files securely. Numerous significant cryptographic techniques are employed to ensure that the encrypted content is only received by the intended recipient.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019702 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Medical Report Management and Distribution System over Blockchain Technology

(51) International classification :G16H0010600000, H04L0009320000, G06F0021620000, G16H0015000000, H04L0029060000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr Arasu R
Address of Applicant :Principal, MBA, University of Madras Arts and Science College, Chennai-600040 ---------- ----------
2)Dr A Thilagaraj
3)Dr.Tulika Saxena
4)Dr.Jerlin Priya Lovelin Auguskani
5)Dr. V.Kannan
6)Dr Magdalene Peter
7)Dr. Vivek Sharma
8)Dr. Ashutosh Priya
9)Mrs.S.Sathya
10)Dr Praveen Kumar S
11)Mr A Sridhar
12)Ms .Gloriya Raju
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Arasu R
Address of Applicant :Principal, MBA, University of Madras Arts and Science College, Chennai-600040 ---------- ----------
2)Dr A Thilagaraj
Address of Applicant :Assistant professor (Sr. G) , Commerce, SRM Institute of Science and Technology, Department of Commerce, College of science and humanities, Chennai- 603203 - ---------- ----------
3)Dr.Tulika Saxena
Address of Applicant :Professor Dept. Of Business Administration hb MJP RohilKhand University Bareilly -243001 ---------- ----------
4)Dr.Jerlin Priya Lovelin Auguskani
Address of Applicant :HOD and Assistant Professor, HOD and Assistant Professor, Aldarb University College,Jazan University, Kingdom of Saudi Arabia ---------- ----------
5)Dr. V.Kannan
Address of Applicant :Managing director, CLDC Research and Development No.997, Mettupalayam Road, Near X-Cut Signal,R.S.Puram, Coimbatore-641002 ---------- ----------
6)Dr Magdalene Peter
Address of Applicant :HOD, MBA, Bharath Institute of Higher Education and Research, Chennai ---------- ----------
7)Dr. Vivek Sharma
Address of Applicant :Director , Management , Sohem Group, Bareilly -243122 ---------- ----------
8)Dr. Ashutosh Priya
Address of Applicant :Associate Professor & Head, Regional Economics, MJP Rohilkhand University, Bareilly ---------- ----------
9)Mrs.S.Sathya
Address of Applicant :Assistant professor , computer applications , Sri Krishna Arts and Science College, COIMBATORE -641008 ---------- ----------
10)Dr Praveen Kumar S
Address of Applicant :MBA, Professor & Dean, School of Commerce and Management, Bharath Institute of Higher Education and Research. Chennai ---------- ----------
11)Mr A Sridhar
Address of Applicant :Principal, Professor & HOD,, Physiotherapy, Sapthagiri Institute of Physiotherapy, Bangalore-560090 ---------- ----------
12)Ms .Gloriya Raju
Address of Applicant :Lecturer, Department: Physiotherapy, Sapthagiri Institute of Physiotherapy, Bangalore-560090 ---------- ----------

(57) Abstract :
Medical Report Management and Distribution System over Blockchain Technology ABSTRACT: Because they contain sensitive information and may be distributed to a variety of locations, such as hospitals, pharmacies, and private clinics, these electronic health records (EHRs) are both valuable and dangerous. A person who has been granted access to this information should keep it secret and only let those who have been granted access to see it. People must not be able to use the system in the event of a big calamity, such as a storm or an earthquake. This is to prevent them from acting inappropriately or even hostilely. Because the records are saved in a linked sequence of blocks that are difficult to delete or edit, it became easier to come up with new concepts for EHR applications that were more likely to work when blockchain, a distributed ledger, was established. This paper does a thorough investigation to determine whether permissioned blockchain implementations could be effective in emergency scenarios induced by natural catastrophes. Some test scenarios based on what happened in Haiti in 2010 were utilised to discuss the strengths and shortcomings of the Hyperledger Fabric EHRs management system. Furthermore, the system could be employed in a variety of ways. People discussed throughput, latency, memory usage, and CPU usage during the conversation. People can now recognise and respond to crises because electronic health records are easier to share and access than they were a few years ago. Credit card payments are nonetheless inefficient, while being up to two orders of magnitude more efficient than permissionless blockchain systems, which are also inefficient. Video: Despite shortcomings, the prototype in this video could be a useful alternative for healthcare networks that need to maintain their patients' treatment consistent while also protecting their privacy and confidentiality in an emergency.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019732 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN APPARATUS FOR SURVEYING A MILIEU AND METHOD OF OPERATION THEREOF

(51) International classification :A61B0005000000, G01K0003000000, G01S0017080000, G01S0015880000, A63B0024000000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Vishnu Prabu R
Address of Applicant :Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
2)Dr. B Sharmila
3)Dr. V Rukkumani
4)Dr. K Srinivasan
5)S Kaushik
6)Chandru S
7)Prasanth A
8)Krishnan Unni R
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vishnu Prabu R
Address of Applicant :Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
2)Dr. B Sharmila
Address of Applicant :Professor, Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
3)Dr. V Rukkumani
Address of Applicant :Associate Professor, Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
4)Dr. K Srinivasan
Address of Applicant :Professor, Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
5)S Kaushik
Address of Applicant :Assistant Professor, Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
6)Chandru S
Address of Applicant :Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
7)Prasanth A
Address of Applicant :Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------
8)Krishnan Unni R
Address of Applicant :Department of EIE, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore – 641022, Tamil Nadu, India ---------- ----------

(57) Abstract :
An apparatus for surveying a milieu is disclosed. Said apparatus broadly comprises: an at least a surveying member (101); an at least a sensing member; an at least an encoder (105); an at least a power supply member (106); an at least a visual interfacing member (107); an at least an audible flag generating member (108); and an at least a propulsion unit (109). Said at least one sensing member broadly includes: an at least a human sensing member (102); an at least an obstacle sensing member (103); and an at least a temperature sensing member (104). Said at least one propulsion unit (109) broadly comprises: a propulsion member; and at least two propulsion supporting members. Said at least one surveying member (101) determines whether: a sensed temperature is above a pre-defined temperature value; and/or a calculated distance is below a pre-defined distance value. The disclosed apparatus offers at least the following advantages: is simple in construction; is cost-effective; and does not rely on cameras and image processing techniques.

No. of Pages : 27 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019747 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PROTETCIVE GRILLE SHUTTER SYSTEM FOR VEHICLES

(51) International classification	:B60K0011080000, B60J0001200000, F01P0007100000, E06B0009880000, E06B0009900000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TATA ELXSI LIMITED
Address of Applicant :ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)HIRISAVE ANJANKUMAR HARSHA
Address of Applicant :TATA ELXSI LIMITED, ITPB Road, Whitefield, Bangalore – 560048, India ---------- ----------

(57) Abstract :
An improved protective grille shutter system (102) for a vehicle (100) includes a shutter assembly (300) positioned relative to a grille (103) in the vehicle (100). The shutter assembly (300) includes a rotatable roller (306), and a roller blind (302) coupled to the roller (306) and a weight (308). The roller blind (302) is deployable between a retracted position and an extended position at which the roller blind (302) covers vents (104) in the grille (103). A shutter control system (200) includes a fluid-level sensor (202) and an actuator (204) coupled to a stopper (304). The actuator (204) rotates upon receiving an activation signal from the shutter control system (200). The rotation of the actuator (204) disengages the stopper (304) from the weight (308), thereby allowing the weight (308) to fall downwards, which deploys the roller blind (302) in the extended position covering the vents (104) in the grille (103).

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2022

(21) Application No.202241019833 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADVANCED THERAPEUTIC MOLECULES FOR TISSUE REGENERATION USING CARBON NANOTUBES

(51) International classification :A61K0047690000, G16B0020000000, A61K0033240000, A61L0027520000, A61B0017700000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)DR. GOVINDARAJ
Address of Applicant :MANAGING DIRECTOR, HARSHAMITRA ONCOLOGY PRIVATE LIMITED, MATHUR PANCHAYAT ROAD JUNCTION, TRICHY MADURAI HIGHWAY, NAGAMANGALAM, TRICHY- 620012, TAMILNADU , INDIA. ---------- ----------
2)DR A V K SHANTHI
3)DR. N. SRINIVASAN ARUNSANKAR
4)DR. DHARSHINI
5)DR.M.K.VALSA KUMARI
6)DR. E .JAYANTHI
7)DR.K.KRISHNAVENI
8)DR.P.LAKSHMIPRABHA
9)DR.S.JEYABHARATHI
10)DR . MOHAN KUMAR RAMAR
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. GOVINDARAJ
Address of Applicant :MANAGING DIRECTOR, HARSHAMITRA ONCOLOGY PRIVATE LIMITED, MATHUR PANCHAYAT ROAD JUNCTION, TRICHY MADURAI HIGHWAY, NAGAMANGALAM, TRICHY- 620012, TAMILNADU , INDIA. ---------- ----------
2)DR A V K SHANTHI
Address of Applicant :PRINCIPAL, DEPARTMENT OF COMPUTER SCIENCE , SRI MEENAKSHI VIDIYAL ARTS AND SCIENCE COLLEGE , VALANADU - KAIKATTY , MARUGAPURI TK , TRICHY - 621305 , TAMILNADU, INDIA. ---------- ----------
3)DR. N. SRINIVASAN ARUNSANKAR
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS, SRI SAI RAM ENGINEERING COLLEGE, WEST TAMBARAM, CHENNAI – 44, TAMILNADU , INDIA. ---------- ----------
4)DR. DHARSHINI
Address of Applicant :W/O JEGANATHAN. P , NO - 1B, SRIVARRI AVENUE, PARI NAGAR, CAK ROAD, KARUR – 639002, TAMILNADU , INDIA. ---------- ----------
5)DR.M.K.VALSA KUMARI
Address of Applicant :PROFESSOR, MOOKAMBIGAI COLLEGE OF ENGINEERING, KALAMAVUR, KEERANUR PUDUKKOTTAI - 622 502, TAMILNADU , INDIA. ---------- ----------
6)DR. E .JAYANTHI
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY, KONGUNADU ARTS AND SCIENCE COLLEGE, COIMBATORE-641029, TAMILNADU , INDIA. ---------- ----------
7)DR.K.KRISHNAVENI
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY, KONGUNADU ARTS AND SCIENCE COLLEGE, COIMBATORE, TAMILNADU , INDIA. ---------- ----------
8)DR.P.LAKSHMIPRABHA
Address of Applicant :HEAD & ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY, SHRIMATI INDIRA GANDHI COLLEGE, TRICHY, TAMILNADU , INDIA. ---------- ----------
9)DR.S.JEYABHARATHI
Address of Applicant :ASSISTANT PROFESSOR, PG AND RESEARCH, DEPARTMENT OF MICROBIOLOGY, CAUVERY COLLEGE FOR WOMEN , TIRUCHIRAPALLI -18, TAMILNADU , INDIA. ---------- ----------
10)DR . MOHAN KUMAR RAMAR
Address of Applicant :DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY, CENTRE FOR EXCELLENCE IN NANOBIO TRANSLATIONAL RESEARCH (CENTRE), BHARATHIDASAN INSTITUTE OF TECHNOLOGY, ANNA UNIVERSITY, TIRUCHIRAPPALLI, 620024, TAMIL NADU, INDIA. ---------- ----------

(57) Abstract :
Advanced therapeutic molecules for tissue regeneration using carbon nanotubes are the proposed. The present invention relates to the field of designing and implementing a framework where the tissue regeneration is treated with therapeutic agents. The invention aims at designing carbon nanotubes filled with nanoparticles that supports the tissue regeneration. The carbon nanotubes are directed towards the damaged tissues with the intention of delivering the nanoparticles and regenerating them.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2022

(21) Application No.202241019918 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Ceiling Fan Mechanically Extending Connecting Tubes

(51) International classification :A47L0009240000, B66F0017000000, G01R0019165000, D04B0001140000, H01B0007320000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mangalore Institute of Technology & Engineering
Address of Applicant :Badaga Mijar, Moodabidri, Karnataka - ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. M S Ganesha Prasad
Address of Applicant :Department of Mechanical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------
2)Mr. Shivaramu H T
Address of Applicant :Department of Mechanical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------
3)Dr. Vignesh Nayak Ullal
Address of Applicant :Department of Mechanical Engineering, Mangalore Institute of Technology & Engineering, Badaga Mijar, Moodabidri ---------- ----------

(57) Abstract :
We claim that, 1. The total extension of the parts numbered 102 to 107 was 1440 mm toward the ground. 2. Part 106 pushes 109 through 108 when the fan is loaded beyond 300N. 3. The concentric tubular telescopic arrangement will not damage the electrical wiring. 4. The extended tube can be restored to its original non-extended position, thereby eliminating any downtime involved in repositioning and reconnecting electrical wires to power the fan. 5. An IoT module that communicates information to the concerned.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2022

(21) Application No.202241019957 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A PROCESS OF EXTRACTION OF SITOSTEROL FROM AMRITA MEHARI AND PRODUCT THEREOF

(51) International classification	:C10G0001040000, A61K0031575000, C07J0009000000, C23G0005060000, C07H0001080000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SREE BALAJI MEDICAL COLLEGE AND HOSPITAL
Address of Applicant :No 7 WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. KANNAN N
Address of Applicant :No.17, FIRST MAIN ROAD, NEW COLONY, CHROMPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
2)Dr. PRABHU K
Address of Applicant :NO.5, RAGHAVENDRA COLONY, NERKUNDRAM ROAD, CHINMAYA NAGAR, CHENNAI TAMIL NADU INDIA 600 092 ---------- ----------
3)DR. GOPI AYYASWAMY
Address of Applicant :No. 187, SIXTH MAIN ROAD, NAGAPPA NAGAR, CHROMPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
4)Dr. SASIKUMAR P
Address of Applicant :PLOT NO.1, BHUVANESHWARI NAGAR, 1ST CROSS STREET, VELACHERY, CHENNAI TAMIL NADU INDIA 600 042 ---------- ----------
5)Dr. SUMATHI JONES C
Address of Applicant :DEPARTMENT OF PHARMACOLOGY & ENVIRONMENTAL TOXICOLOGY, DR. ALM PG INSTITUTE OF BASIC MEDICAL SCIENCE, UNIVERSITY OF MADRAS, TARAMANI CAMPUS, CHENNAI TAMIL NADU INDIA 600 113 ---------- ----------
6)Dr. M. KAVIMANI
Address of Applicant :26 JOSEPH COLONY, ADAMBAKKAM, CHENNAI TAMIL NADU INDIA 600 088 ---------- ----------
7)MUDIGANTI RAMKRISHNA RAO
Address of Applicant :B 22/1, FIRST MAIN ROAD, ANNA NAGAR, CHENGALPATHU, TAMIL NADU INDIA 603 011 ---------- ----------

(57) Abstract :
TITLE: A PROCESS OF EXTRACTION OF SITOSTEROL FROM AMRITA MEHARI AND PRODUCT THEREOF APPLICANT: SREE BALAJI MEDICAL COLLEGE AND HOSPITAL ABSTRACT The present invention discloses a novel process of extraction of anti diabetic property exhibiting active biomolecule sitosterol from Amirta mehari. The process of the present invention comprises of following steps: a. evaporating volatile organic solvents from predetermined volume of Amirta mehari using rotory evaporator for predetermined time to obtain a paste; b. dissolving the paste with predetermined volume of ethyl acetate or chloroform to form a solution in which organic layer is separated; c. adding predetermined amount of NaCl or Na2SO4 to the organic layer followed by evaporating volatile organic solvent for predetermined time to form sitosterol as residue. The present invention also discloses an anti diabetic property exhibiting active biomolecule sitosterol extracted from the process as described above.

No. of Pages : 26 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2022

(21) Application No.202241019958 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A PROCESS OF EXTRACTION OF BIOACTIVE COMPOUND EXHIBITING BIOFILM BACTERIAL INHIBITION FROM A NOVEL STRAIN PSEUDOMONAS SP. SBMCH11

(51) International classification :C12R0001380000, A61P0031040000, C12P0017160000, C07D0311400000, C07H0017040000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SREE BALAJI MEDICAL COLLEGE AND HOSPITAL
Address of Applicant :No 7 WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)PROF. PALANIYANDI VELUSAMY
Address of Applicant :SREE BALAJI MEDICAL COLLEGE AND HOSPITAL, No 7, WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------

(57) Abstract :
TITLE: A PROCESS OF EXTRACTION OF BIOACTIVE COMPOUND EXHIBITING BIOFILM BACTERIAL INHIBITION FROM A NOVEL STRAIN PSEUDOMONAS SP. SBMCH11 APPLICANT: SREE BALAJI MEDICAL COLLEGE AND HOSPITAL ABSTRACT The present invention discloses a process for extraction of anti-biofilm property exhibiting bio-active compound marine 2,4-di-tertbutylphenol from a novel strain Pseudomonas sp. SBMCH11, the said process comprises of following steps: (a) isolation of Pseudomonas sp. SBMCH11 from marine sample and identification of the strain by morphological, biochemical and 16S rRNA gene sequencing; (b) fermenting the isolated Pseudomonas sp. SBMCH11 in Marine broth followed by centrifugation to obtain supernatant and pellet, in which the pellet is discarded; (c) extracting the supernatant with hexane and separating hexane organic layer based on density, in which aqueous layer and light weight debris layer is discarded; (d) extracting the hexane organic layer with ethyl acetate and separating ethyl acetate organic layer based on density, in which aqueous layer and light weight debris layer is discarded; (e) drying the ethyl acetate organic layer followed by purification to obtain anti-biofilm property exhibiting bio-active compound marine 2,4-di-tertbutylphenol. The present invention also discloses a marine 2,4-di-tertbutylphenol bioactive compound exhibiting antibiofilm property extracted from a novel strain Pseudomonas sp. SBMCH11 by the process as described above.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2022

(21) Application No.202241020043 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VAYUPUTHRA – AN IoT BASED FLOOD SURVEILLANCE SYSTEM

(51) International classification :G06K0009000000, H04N0005225000, G08B0013196000, G05B0019042000, H04N0005232000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Mangalam College of Engineering, Kerala
Address of Applicant :Mangalam College of Engineering Vettimukal Post, Ettumanoor, Kottayam, Kerala, India – 686 631 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)T D Subash
Address of Applicant :T D Subash Professor Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India - 686631 ---------- ----------
2)Jomon Thomas George
Address of Applicant :Jomon Thomas George UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------
3)Ajay Prakash
Address of Applicant :Ajay Prakash UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------
4)Aswin Jayaprakash
Address of Applicant :Aswin Jayaprakash UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------
5)Jerin K Paulose
Address of Applicant :Jerin K Paulose UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------
6)Ameer Najeeb
Address of Applicant :Ameer Najeeb UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------
7)Prasanth Suresh
Address of Applicant :Prasanth Suresh UG Scholar Department of Electronics and Communication Engineering Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, India – 686631 ---------- ----------

(57) Abstract :
Vayuputhra – an iot based flood surveillance system, This invention represents the field of meteorology. We are developing a flood monitoring system, consisting of a rail block sensor control unit, and a hexacopter drone based Raspberry unit. Rail based sensor blocks will be installed at various places where there is a possibility of floods. Based on this data the drone will automatically move towards the specified GPS location and monitor if anyone is stuck in the position. The drone can also be controlled manually. The camera module mounted on the drone provides the vision, and the count of those trapped can be collected using the YOLO V4. It is a useful technology, and this technology can be easily manufactured for domestic and industrial benefits.

No. of Pages : 24 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020064 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A STURDY DATASET FOR RF MEMS SWITCHES DIMENSIONS PREDICTION USING CASCADE FEED FORWARD NEURAL NETWORK

(51) International classification :H01H0059000000, G06F0030230000, G06N0003100000, H02P0006340000, G06F0119080000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)THALLURI LAKSHMI NARAYANA
Address of Applicant :#25-7-25/3, sambasiva nagar ---------- ----------
2)BABBURU KIRANMAI
3)K V VENKATA KUMAR
4)KONARI RAJASEKHAR
5)MALLAVARAPU RAJAN BABU
6)KAPILA GURUCHARAN
7)B BALAJI BHANU
8)K RAJKAMAL
9)S ARUNA KUMARI
10)SANTOSH KIRAN SIMHADRI
11)DARAM NAGA BHUSHANA BABU
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)LAKSHMI NARAYANA THALLURI
Address of Applicant :Dr. Lakshmi Narayana Thalluri, S/o. T Venkata Subba Rao, Associate Professor, ECE, Andhra Loyola Institute of Engineering and Technology, Vijayawada. Door No. 25-7-25/3, Sambasiva Nagar, Ponnur -522124, Andhra Pradesh, INDIA. ---------- ----------
2)BABBURU KIRANMAI
Address of Applicant :Dr. B Kiranmai, W/o. B. Prasada Rao, Professor, ECE, Lendi Institute of Engineering and Technology, Vizianagaram. Flat No 102, Gayatri Nivas, Jagannadhapuram, Akkayyapalem, Visakhapatnam -530016, INDIA. ---------- ----------
3)K V VENKATA KUMAR
Address of Applicant :Dr. K V Venkata Kumar, S/o. K Yedukondalu, Associate Professor, ECE, Universal College of Engineering and Technology, Dokiparru. Door No.: 13-1-72, Near Hero Showroom, Back side lane kothapet, Guntur-522001, Andhra Pradesh, India. ---------- ----------
4)KONARI RAJASEKHAR
Address of Applicant :Konari Rajasekhar, S/o. K Ramarao, Assistant Professor, ECE,N S Raju Institute of Technology (Autonomouse), Visakhapatnam, Door No.: 58-28-1/44, Appayyamma Towers, Butchirajpalem, NAD, Visakhapatnam-530027, Andhra Pradesh, India. ---------- ----------
5)MALLAVARAPU RAJAN BABU
Address of Applicant :Dr. M.Rajan Babu, S/o. M. Purushotham, Professor, ECE, Lendi Institute of Engineering and Technology Vizianagaram, H. NO.: 8-4-53, Plot No. 28, Doctor's colony, Pedawaltair, Visakhapatnam, Andhra Pradesh, India. 530017. ---------- ----------
6)KAPILA GURUCHARAN
Address of Applicant :Kapila Gurucharan, S/o K V L Subba Rao, Assistant Professor, ECE, Lendi Institute of Engineering and Technology, Plot No. B 42, Dayalnagar Colony, Near Visalakshinagar, Visakhapatnam, Andhra Pradesh, INDIA, 530043. ---------- ----------
7)B BALAJI BHANU
Address of Applicant :B Balaji Bhanu, S/o. B M Mohan Rao, Assistant Professor, Department of Electronics, Andhra Loyola College(Autonomous), Door No.:36-12-14, Classic Circle Buildings #2, Dr K Butchi Babu street, Moghalrajpuram, Vijayawada-520010, Andhra Pradesh, INDIA. ---------- ----------
8)K RAJKAMAL
Address of Applicant :Associate Professor, ECE, Kallam Haranadhareddy Institute of Engineering Technology, Guntur. Door No.20-14-22, Mantri vari street, Sangadiginta, Guntur-522003, Andhra Pradesh, INDIA. ---------- ----------
9)S ARUNA KUMARI
Address of Applicant :S Aruna Kumari, D/o. S Venkata Raju, Assistant Professor, ECE, Raghu Institute of Technology, Visakhapatnam. D.No.: 39-24-20/5, Near to Latha Memoriel School, 522003. ---------- ----------
10)SANTOSH KIRAN SIMHADRI
Address of Applicant :S S Kiran, S/o Satyanarayana, Assistant Professor, ECE, Lendi Institute of Engineering and Technology Vizianagaram. D No: 10-35-46 Ram Nivas, Bank Colony, Bheemunipatnam, Visakhapatnam, Andhra Pradesh, INDIA. 531163. ---------- ----------
11)DARAM NAGA BHUSHANA BABU
Address of Applicant :Daram Naga Bhushana Babu, S/o. D Rambabu, Assistant Professor,ECE, Chalapathi institute of Engineering and technology, D NO: 6-301,Srilanka colony, Near Bus Stand, Vuyyuru-521165, Andhra Pradesh, India. ---------- ----------

(57) Abstract :
The present invention generally relates to a sturdy dataset useful to predict the optimal dimensions of Shunt Capacitive RF MEMS switch. The dataset was named as DrTLN-RF-MEMS-SWITCH-DATASET-01. The dataset comprises of mechanical parameters, electrical parameters and radiofrequency parameters. The overall dataset comprises at least 6-inputs and 11-outputs variables. The presented dataset is useful to predict the RF MEMS switch dimension of three different membrane structures i.e., cantilever, crab leg, and serpentine. The performance of the dataset was analyzed using artificial neural networks (ANN) i.e., Feed Forward neural networks and Cascade Feed Forward Neural Networks. Eventually the ANN results are compared with Finite Element Method (FEM) tool simulations which helps to better validation of presented dataset. The presented dataset helps in the design of RF MEMS switch for targeted application.

No. of Pages : 29 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020077 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR REFINING SALT EFFLUENT

(51) International classification :C12R0001890000, C12N0001120000, B01D0053560000, C01D0003060000, A21D0002160000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)SREE BALAJI MEDICAL COLLEGE AND HOSPITAL
Address of Applicant :No 7 WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)RATHINAM RAJA
Address of Applicant :SREE BALAJI MEDICAL COLLEGE AND HOSPITAL No 7, WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------
2)KULANDAIYESU ARUNKUMAR
Address of Applicant :DEPARTMENT OF PLANT SCIENCES, SCHOOL OF BIOLOGICAL SCIENCES CENTRAL UNIVERSITY OF KERALA, PERIYE, KASARAGOD KERALA INDIA 671 320 ---------- ----------
3)MATHIYAZHAGAN NARAYANAN
Address of Applicant :DIVISION OF RESEARCH AND INNOVATION, DEPARTMENT OF BIOTECHNOLOGY SAVEETHA SCHOOL OF ENGINEERING, SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE, CHENNAI TAMIL NADU INDIA 602 105 ---------- ----------
4)SABARISWARAN KANDASAMY
Address of Applicant :DEPARTMENT OF BIOMASS AND ENERGY CONVERSION, INSTITUTE OF ENERGY AND ENVIRONMENTAL ENGINEERING SAVEETHA SCHOOL OF ENGINEERING, SAVEETHA UNIVERSITY, CHENNAI TAMIL NADU INDIA 602 105 ---------- ----------
5)ALAGARSAMY ARUN
Address of Applicant :DEPARTMENT OF MICROBIOLOGY SCIENCE CAMPUS ALAGAPPA UNIVERSITY KARAIKUDI TAMIL NADU INDIA 630 003 ---------- ----------
6)KOTHILMOZHIAN RANISHREE JAYAPPRIYAN
Address of Applicant :CENTRE FOR ADVANCED STUDIES IN BOTANY UNIVERSITY OF MADRAS, GUINDY CAMPUS, CHENNAI TAMIL NADU INDIA 600 025 ---------- ----------
7)RAMASAMY PALANIAPPAN
Address of Applicant :SREE BALAJI MEDICAL COLLEGE AND HOSPITAL No 7, WORKS ROAD, CHROMEPET, CHENNAI TAMIL NADU INDIA 600 044 ---------- ----------

(57) Abstract :
TITLE: A SYSTEM FOR REFINING SALT EFFLUENT APPLICANT: SREE BALAJI MEDICAL COLLEGE AND HOSPITAL ABSTRACT
The present invention discloses a novel system for refining salt effluent by employing microalgae to remove the presence of harmful contaminants and hazardous toxic chemicals in salt effluent. The System of the present invention comprises of following steps, a) subjecting salt effluent to agitating container adapted to undergo agitation to form agitated salt effluent b) subjecting the agitated salt effluent into a filtration chamber for filtering to obtain filtrate & residue in which the residue is discarded c) subjecting the filtrate into an oxidizing container comprising micro algal biomass characterized combination of Chlorella vulgaris and Scenedesmus quadricauda and allowed to oxidize under sunlight for few days to obtain refined salt effluent.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020079 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENVIRONMENTALLY BENIGN GLUCOSE BASED BISCARBONATE MONOMERS SYNTHETIC PROCESS THEREOF

(51) International classification :C08G0071040000, C07D0317360000, C07D0221040000, C08K0003260000, C07C0069960000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Tushar Jana
Address of Applicant :School of Chemistry University of Hyderabad Hyderabad 500046 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mithun Chakraborty
Address of Applicant :School of Chemistry University of Hyderabad Hyderabad 500046 ---------- ----------
2)Tushar Jana
Address of Applicant :School of Chemistry University of Hyderabad Hyderabad 500046 ---------- ----------

(57) Abstract :
The current invention outlines a simple, cost effective and industrially scalable synthetic pathway for the synthesis of a series of non-toxic bis(cyclic carbonates) monomers intending to prepare greener D-glucose-based polyurethanes for the end users. A methodology of preparing series of bis(cyclic carbonates) is presented, the methodology comprising of reaction between D-glucose based five-membered and six-membered mono-cyclic carbonate with dithiol in presence of a catalytic AIBN as free-radical initiator. In one embodiment of the present disclosure, method for preparation of D-glucose based five-membered mono-cyclic carbonate and six-membered mono-cyclic carbonate encompassing of reaction between substituted glucose-1,2-diol or 1,3-diol compound with triphosgene as carbonylating agent to produce mono-cyclic carbonate is reported. These intermediary mono-cyclic carbonates can be used as reagents for synthesizing block copolymer architecture and bis(cyclic carbonates) which is a key ingredient to prepare biodegradable and biocompatible polyhydroxyurethanes through a greener non-isocyanate route.

No. of Pages : 35 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020085 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR SECURE CLUSTERING AND DATA TRANSMISSION IN VEHICULAR AD HOC NETWORK USING WEIGHT EVALUATION

(51) International classification :H04L0029060000, H04W0084180000, H04L0029080000, H04W0040040000, G06Q0050300000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Basavaraj S Mathapati
Address of Applicant :Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Sharnbasva University, Kalaburagi, Karnataka, India. Pin Code:585105 ---------- ----------
2)Dr. Sridevi Hosmani
3)Dr. Jyoti Maranur
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Basavaraj S Mathapati
Address of Applicant :Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology, Sharnbasva University, Kalaburagi, Karnataka, India. Pin Code:585105 ---------- ----------
2)Dr. Sridevi Hosmani
Address of Applicant :Associate Professor, Department of Information Science and Engineering, Faculty of Engineering and Technology (Exclusively for Women), Sharnbasva University, Kalaburagi, Karnataka, India. Pin Code:585105 ---------- ----------
3)Dr. Jyoti Maranur
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Faculty of Engineering and Technology (Exclusively for Women), Sharnbasva University, Kalaburagi, Karnataka, India. Pin Code:585105 ---------- ----------

(57) Abstract :
The present invention discloses a system for secure clustering and data transmission in vehicular ad hoc network using weight evaluation. The system builds using two functions as clustering and routing. For clustering, after discovering the optimal number of clusters, the weight-based secure and optimal CH selection is performed periodically. During the CH selection, each vehicle weight had updated in the routing table with lists of malicious and legitimate nodes. This integrated design of optimal CH with attack detection mechanism results in reliable and robust clustering for VANET. The weights and lists have been utilized in process of data transmissions, and hence it saves significant computational efforts for proposed protocols and hence further improves the robustness. From the results, the proposed system reduced the communication delay by 8.5 % and control overhead by 11.4 % compared to state-of-art protocols. The average throughput and PDR performance have increased by 4.7 % and 7.88 % compared to the state-of-art method. Accompanied Drawing [FIG. 1]

No. of Pages : 29 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020086 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Fast statistical imaging reconstruction by algebraic reconstruction technique

(51) International classification :G06T0011000000, G06T0005000000, G01R0033560000, G06T0005100000, A61B0008080000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. K. Hari Babu
Address of Applicant :Associate Professor, Department of Mathematics, Malla Reddy Engineering College (Autonomous), Secunderabad, Telangana, India, Pincode: 500100 ---------- ----------
2)Dr. K. Umamaheswari
3)Dr. Suresh Kumar Yanduri
4)Mr. Nandyala Ravi Kumar
5)Dr. G. Nageswari
6)Dr. P. Sudam Sekhar
7)Dr. Sudhakar Jyothula
8)Dr. V. Sree Ramani
9)Dr. Kavita B. Bajpai
10)Mr. Kumara Mohan Babu
11)Dr. B. Nageswara Rao
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. K. Hari Babu
Address of Applicant :Associate Professor, Department of Mathematics, Malla Reddy Engineering College (Autonomous), Secunderabad, Telangana, India, Pincode: 500100 ---------- ----------
2)Dr. K. Umamaheswari
Address of Applicant :Associate Professor, Department of Mathematics, Srinivasa Ramanujan Institute of Technology, Ananthapuramu, Andhra Pradesh, India, Pincode: 515701 ---------- ----------
3)Dr. Suresh Kumar Yanduri
Address of Applicant :Associate Professor, Department of Mathematics, Koneru Lakshmaiah Education Foundation, Off Campus, Hyderabad, Telangana, India, Pincode: 500075 ---------- ----------
4)Mr. Nandyala Ravi Kumar
Address of Applicant :Assistant Professor, Department of Mathematics, Malla Reddy Engineering College (Autonomous), Secunderabad, Telangana, India, Pincode: 500100 ---------- ----------
5)Dr. G. Nageswari
Address of Applicant :Associate Professor, Department of Mathematics, PVKK Institute of Technology, Anantapur, Andhra Pradesh, India, Pincode: 515002 ---------- ----------
6)Dr. P. Sudam Sekhar
Address of Applicant :Associate Professor, Department of Mathematics, Vignan's Foundations for Science Technology and Research (Deemed to be University), Vadlamudi, Guntur, Andhra Pradesh, India, Pincode: 522213 ---------- ----------
7)Dr. Sudhakar Jyothula
Address of Applicant :Professor, Department of ECE, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh, India, Pincode: 530049 ---------- ----------
8)Dr. V. Sree Ramani
Address of Applicant :Assistant Professor, Department of Mathematics, Chaitanya Bharathi Institute of Engineering and Technology, Gandipet, Telangana, Hyderabad, India, Pincode:500075 ---------- ----------
9)Dr. Kavita B. Bajpai
Address of Applicant :Assistant Professor, Department of Mathematics, K D K College of Engineering, Nagpur, Maharashtra, India, Pincode: 440009 ---------- ----------
10)Mr. Kumara Mohan Babu
Address of Applicant :Guest Faculty, IIIT- Ongole, RGUKT-AP, Ongole, Andhra Pradesh, India, Pincode:523001 ---------- ----------
11)Dr. B. Nageswara Rao
Address of Applicant :Associate Professor, Department of Mathematics, Lendi Institute of Engineering and Technology, Jonnada, Vizianagaram, Andhra Pradesh, India, Pincode: 535005 ---------- ----------

(57) Abstract :
Systems and techniques for iteratively reconstructing pictures from data captured using a medical imaging system are described in this paper. a. Introduction: The picture reconstruction issue is broken into discrete linear sub-problems, each of which can be handled more efficiently than the previous one. A statistical image reconstruction process is split into a statistically-weighted algebraic reconstruction update sequence and a statistically-weighted algebraic reconstruction update sequence. Using a regularization function, the rebuilt picture is then denoised when this stage is completed.

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2022

(21) Application No.202241020091 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THE IMPACT OF STATISTICS AND PROBABILITY IN REAL TIME OBJECT RECOGNITION USING DATA SCIENCE

(51) International classification	:G06N0020000000, G06K0009000000, G06K0009620000, G06N0005040000, G06N0003040000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Sharmila Mary Arul
Address of Applicant :Professor and Head Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------
2)Dr. G. Arul Freeda Vinodhini
3)Dr. P. Hemavathi
4)G. Gomathi
5)Dr. T. N. M. Malini Mai
6)Dr. G. Navamani
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Sharmila Mary Arul
Address of Applicant :Professor and Head Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------
2)Dr. G. Arul Freeda Vinodhini
Address of Applicant :Associate Professor Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------
3)Dr. P. Hemavathi
Address of Applicant :Assistant Professor (SG) Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu ---------- ----------
4)G. Gomathi
Address of Applicant :Assistant Professor (SG) Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------
5)Dr. T. N. M. Malini Mai
Address of Applicant :Professor Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------
6)Dr. G. Navamani
Address of Applicant :Associate Professor Department of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai Pin: 602105 State: Tamil Nadu Country: India ---------- ----------

(57) Abstract :
THE IMPACT OF STATISTICS AND PROBABILITY IN REAL TIME OBJECT RECOGNITION USING DATA SCIENCE Abstract: Despite the fact that computer science and mathematics are intricately intertwined, you may have had only a cursory education in math in school. In terms of mathematics, your calculator is perhaps the most complex computer you've ever used. On the other hand, statistics are far more enjoyable to work with in computer science than staring at a bunch of numbers for hours on end. Statistics are at the heart of machine learning, and grasping the principles of statistics may aid in your comprehension of topics such as real-time object identification and deep learning networks, among others. On the basis of the information in this essay, we may develop our own dictionary of machine learning and artificial intelligence applications. This technology can aid us in resolving non-tangible issues, such as supporting healthcare providers with patient treatment, speech recognition, and a range of other jobs. If you own an Alexa, Google Home, or even a simple smartphone, you've almost certainly used voice recognition in your daily life. If artificial intelligence or machine learning systems are to be used, all options must be considered. Working with more complicated machine learning and artificial intelligence systems requires a firm grasp of probability theory.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2022

(21) Application No.202241020094 A

(43) Publication Date : 15/04/2022

(54) Title of the invention : INTELLIGENT ROBOTIC EXOSKELETON AND BRAIN SENSING HEADBAND TO ENABLE PARALYZED PEOPLE TO LOCOMOTE

(51) International classification :G06K0009620000, A61B0005160000, G06N0020000000, B25J0009000000, G16C0020700000

(86) International Application No :PCT//
Filing Date :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.S.Balamurugan
Address of Applicant :No.21, Kalloori Nagar, Peelamedu, Coimbatore-641004, Tamilnadu, India ---------- ----------
2)DR.SUMIT KUMAR MISHRA
3)DR.BALBIR SINGH
4)MRS.N.SRIJA
5)YAMINIPRIYA S
6)DR.RAMAKRISHNA KUMAR M.V.N.M
7)MS. SHAHIDA. T.
8)DR.INDRAJIT PAN
9)MS.ROMISHA
10)DR.SAVITA SINDHU
11)MR.ADITYA DEV MISHRA
12)DR.RAVI KUMAR
13)DR.PAVITHRA G
14)DR.T.C.MANJUNATH
15)DR.D.P.KOTHARI
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.S.Balamurugan
Address of Applicant :No.21, Kalloori Nagar, Peelamedu, Coimbatore-641004, Tamilnadu, India ---------- ----------
2)DR.SUMIT KUMAR MISHRA
Address of Applicant :Assistant Professor, CSE, BABU BANARASI DAS ENGINEERING COLLEGE LUCKNOW , Faizabad Rd, Lucknow, Uttar Pradesh 226028, India (DR APJ ABDUL KALAM TECHNICAL UNIVERSITY FORMALLY AKTU 226028) ---------- ----------
3)DR.BALBIR SINGH
Address of Applicant :Faculty, Administrative Staff College of India, 7B, College Park Campus, Hyderabad 500034, India ---------- ----------
4)MRS.N.SRIJA
Address of Applicant :Assistant Professor, Department of Information Technology, M.Kumarsamy College of Engineering,Karur, Thalavapalayam, Tamil Nadu 639113, India ---------- ----------
5)YAMINIPRIYA S
Address of Applicant :DHANALAKSHMI SRINIVASAN COLLEGE OF ENGINEERING, NH 47-PALAKKAD MAIN ROAD, NAVAKKARAI POST, COIMBATORE – 641105, Tamilnadu, India ---------- ----------
6)DR.RAMAKRISHNA KUMAR M.V.N.M
Address of Applicant :Deputy Head of the Department, Electrical and Communication Engineering Department, College Of Engineering, National University of Science and Technology, Sultanate of Oman ---------- ----------
7)MS. SHAHIDA. T.
Address of Applicant :Sr.Lecturer, Electrical and Communication Engineering Department, College Of Engineering, National University of Science and Technology, Sultanate of Oman ---------- ----------
8)DR.INDRAJIT PAN
Address of Applicant :RCC Institute Of Information Technology, Beleghata, Kolkata, West Bengal 700015, India ---------- ----------
9)MS.ROMISHA
Address of Applicant :FET-ECE-MRIIRS, Sector – 43, Delhi–Surajkund Road, Faridabad – 121004, Haryana, India ---------- ----------
10)DR.SAVITA SINDHU
Address of Applicant :FET-ECE-MRIIRS, Sector – 43, Delhi–Surajkund Road, Faridabad – 121004, Haryana, India ---------- ----------
11)MR.ADITYA DEV MISHRA
Address of Applicant :School of Computing, DIT University, Dehradun, Uttarakhand,248009, India ---------- ----------
12)DR.RAVI KUMAR
Address of Applicant :Department of Electronics and Communication Engineering, Jaypee University of Engineering and Technology, A.B. Road, Raghogarh, Guna-473226. (Madhya Pradesh), India. ---------- ----------
13)DR.PAVITHRA G
Address of Applicant :Associate Professor, Electronics & Communication Engg Dept. (ECE), Dayananda Sagar College Of Engg. (Dsce), Block No. 17, Room No. 17205, Kumaraswamy Laout, Shavigemalleshwara Hills, Bangalore- 560078, Karnataka, India. ---------- ----------
14)DR.T.C.MANJUNATH
Address of Applicant :Professor & Head Of The Dept. Electronics & Communication Engg Dept. (ECE), Dayananda Sagar College Of Engg. (Dsce), Block No. 17, Room No. 208 Kumaraswamy Layout, Shavigemalleshwara Hills, Bangalore-560078, Karnataka, India. ---------- ----------
15)DR.D.P.KOTHARI
Address of Applicant :Ex Vice Chancellor, VIT, Vellore Campus, Tiruvalam Rd, Katpadi, Vellore, Tamil Nadu 632014 ---------- ----------

(57) Abstract :
Next to heart attacks, stroke is considered to be the primary reason for death and disability among people. The causes of paralysis may range from local dysfunction to immobilizing the patient. Proposed method works by capturing the hand movements and classifying the same. The processing of hand movements include separation, sampling, filtering and removal of artifacts. After the process of power spectral analysis, a rule-based classification model is developed for training and testing the data using Support Vector Machines (SVM), KNN, Naïve Bayes, Ensemble for Boosting and Linear Discriminant Analysis. A specific threshold is monitored and the robotic exoskeleton is triggered when the attention value exceeds the threshold. The hand movements simulates the motion perception and motion control thereby coordinating with the visually guided mirror neuron to serve for the appropriate movement in the motor centre.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2022

(21) Application No.202241020108 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MACHINE LEARNING BASED APPROACH TO ANALYSE THE DIFFERENTIAL DELAYS IN FISHING INDUSTRIES

(51) International classification :A61K0039395000, G06N0020000000, G06K0009000000, C07K0016280000, G16H0010200000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)DR. V. ANANTHAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MATHEMATICS, SCHOOL OF ARTS AND SCIENCE, AV CAMPUS , PAIYANIOR CHENGALPATTU DISTRICT ---------- ----------
2)LOGANATHAN S
3)MR. M. RAMESH
4)KARTHICK SWAMINATHAN R
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. V. ANANTHAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MATHEMATICS, SCHOOL OF ARTS AND SCIENCE, AV CAMPUS , PAIYANIOR CHENGALPATTU DISTRICT ---------- ----------
2)LOGANATHAN S
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS, SCHOOL OF ARTS AND SCIENCE,AV CAMPUS,VMRF, PAIYANOOR, CHENGALPATTU DIST 603104 ---------- ----------
3)MR. M. RAMESH
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS, SCHOOL OF ARTS AND COLLEGE, AV CAMPUS, VMRF, PAIYANOOR, CHENGALPATTU- 603104 ---------- ----------
4)KARTHICK SWAMINATHAN R
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS, SCHOOL OF ARTS AND SCIENCE, AV CAMPUS, VMRF, CHENNAI-603104 ---------- ----------

(57) Abstract :
Machine learning based approach to analyse the differential delays in fishing industries is the proposed invention. The proposed invention focuses on training the module for understanding the differential delays in fishing industries. The proposed invention will identify the pros and cons of fishing industry through predictive algorithms.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2022

(21) Application No.202241020111 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Combined Heat and Power Emission Dispatch(SHPEmD) using Shuffled Differential Evolution Algorithm

(51) International classification :G06Q0010060000, G06N0003000000, C12N0015100000, G06N0003120000, H04W0024000000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. R. SRINU NAIK
Address of Applicant :Faculty, Department of Electrical Engineering, AU College of Engineering (A), Andhra University, Visakhapatnam – 03 ---------- ----------
2)Mr S Nagraju
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. R. SRINU NAIK
Address of Applicant :Faculty, Department of Electrical Engineering, AU College of Engineering (A), Andhra University, Visakhapatnam – 03 ---------- ----------
2)Mr S Nagraju
Address of Applicant :Research Scholar, Department of Electrical Engineering, Andhra University College of Engineering (A), Visakhapatnam, Andhra Pradesh, India. ---------- ----------

(57) Abstract :
Exemplary aspects of the spresent disclosure are directed towards Combined Heat and Power Emission Dispatch(SHPEmD) using Shuffled Differential Evolution Algorithm. The primary motivation for this invention is to disclose a novel metaheuristic algorithm SDE augments the features of both shuffled frog-leaping algorithm and differential evolution algorithm by employing partitioning and shuffling. In order to verify the effectiveness of the shuffled-differential evolution (SDE) algorithm and also to identify the ideal solution of the CHPEmD problem, test systems having two caliber test units are considered. The outcomes attained from the projected technique are contrasted with the other optimization techniques and found that the projected technique shows remarkable performance in the resolution and the conjunction characteristics.

No. of Pages : 15 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2022

(21) Application No.202241020113 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AI based Holistic Wellness Management and Gymnasium Automation Module with Virtual Assistant Tool

(51) International classification	:H04N0007180000, G06F0003160000, G06Q0050100000, G06F0015160000, H04L0029080000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Ogive Technology LLP
Address of Applicant :Plot No:9 S M R Enclave Himayat Sagar Bandlaguda, Hyderabad, Telangana 500086. India ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mily J Saxena
Address of Applicant :CMD, Ogive Technology LLP, Plot No:9 S M R Enclave Himayat Sagar Bandlaguda, Hyderabad, Telangana 500086. India ---------- ----------

(57) Abstract :
Ayushman provides an end-to-end solution to customer and staff of gymnasium and well ness centre to have a layered solution to provide them customised management of the routine functioning of the gymnasium along with real time sensor integrated data analytics solution from regime-package suggestion to, routine suggestion. Existing CCTV infrastructure based real time video captured analysis for monitoring conduct adequacy. 24x7 accessibility to members and staff with virtual assistant. Flexibility in terms of on-premise or cloud deployment.

No. of Pages : 20 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020115 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BLAST RESISTANT ANALYSIS AND DESIGN OF RCC MULTISTOREY BUILDING

(51) International classification :E04H0009020000, G06F0030130000, E02D0027340000, F42D0005045000, E06B0005120000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)BUTTI VENKATESH
Address of Applicant :Assistant Professor, Shri Vishnu Engineering College for Women (Autonomous), Bhimavaram- 534202, Andhra Pradesh, India ---------- ----------
2)OMMI SURESH
3)Samrendra Kumar Singh
4)Dr. Umesh P. Patil
5)Y VENKTA ARCHAN
6)Mr. Sujith Velloor S Nair
7)Dr. Vinay kumar Gaddam
8)Kuchipudi Kundana Priya
9)Mrs. Mallika Chowdary Chirumamilla
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)BUTTI VENKATESH
Address of Applicant :Assistant Professor, Shri Vishnu Engineering College for Women (Autonomous), Bhimavaram- 534202, Andhra Pradesh, India ---------- ----------
2)OMMI SURESH
Address of Applicant :Assistant professor, Department of Civil Engineering, Dadi Institute of Engineering and Technology, Anakapalle, Visakhapatnam-531002, Andhra Pradesh, India ---------- ----------
3)Samrendra Kumar Singh
Address of Applicant :Assistant Professor and Head of the Department, Department of Civil Engineering, R.R. Institute of Modern Technology, Lucknow, Uttar Pradesh, India ---------- ----------
4)Dr. Umesh P. Patil
Address of Applicant :Principal, VSM'S SOMASHEKAHR R. KOTHIWALE INSTITUTE OF TECHNOLOGY, Basav Vidya Nagar, Nipani – 591237, Belagavi (Dist), Karnataka, India ---------- ----------
5)Y VENKTA ARCHAN
Address of Applicant :Assistant professor, Brindavan Institute of Technology& Science, JNTUA, Kurnool, Andhra Pradesh, India ---------- ----------
6)Mr. Sujith Velloor S Nair
Address of Applicant :Assistant Professor, Sankalchand Patel University, Sankalchand Patel Vidyadham, Ambaji-Gandhinagar State Highway, Visnagar, Mehsana-384315, Gujarat, India ---------- ----------
7)Dr. Vinay kumar Gaddam
Address of Applicant :Associate Professor, Department of Civil Engineering, Dhanekula Institute of Engineering and Technology, Vijayawada-521137, Andhra Pradesh, India ---------- ----------
8)Kuchipudi Kundana Priya
Address of Applicant :Department of Civil Engineering, Dhanekula Institute of Engineering and Technology, Vijayawada-521137, Andhra Pradesh, India ---------- ----------
9)Mrs. Mallika Chowdary Chirumamilla
Address of Applicant :Assistant Professor, Department of Civil Engineering, Koneru Lakshmaiah Educational Foundation, Guntur, Andhra Pradesh, India ---------- ----------

(57) Abstract :
BLAST RESISTANT ANALYSIS AND DESIGN OF RCC MULTISTOREY BUILDING The present invention relates to a method for blast resistant analysis and design of reinforced cement concrete (RCC) multistorey building. The method comprising providing the minimum distance for a face where building is exposed to roads and based on the type of structure from IS: 4991-1968, providing the safety room where the effect of explosion is minimum and a communication means to inform the information of blast to all the floors in the building. The analysis of the structure is carried out using two loading combinations separately as a) Dead load +Live load b) Earthquake load c) Wind load d) Blast load. Figure of abstract: FIG. 1

No. of Pages : 28 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020116 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A System and Methods for providing Security and Safety of Kids using Artificial Intelligence

(51) International classification :E06B0009000000, G08B0021020000, F21V0033000000, E06B0009040000, H04N0007180000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. C.N.S.Vinoth Kumar
Address of Applicant :Associate Professor, Department of Networking and Communications, SRM Institute of Science and Technology, Kattankulathur, Chennai - 603203, TamilNadu (State), India ---------- ----------
2)Dr. R.Naresh
3)Mrs. U.Padmavathi
4)Dr. M.Vasim babu
5)Mrs. S.Annie Sheryl
6)Dr. J. Senthil Kumar
7)Mr. K.Lakshmi Narayanan
8)Mr. U. Sakthivelu
9)Dr. R.Suguna
10)Dr. K.Pazhanisamy
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. C.N.S.Vinoth Kumar
Address of Applicant :Associate Professor, Department of Networking and Communications, SRM Institute of Science and Technology, Kattankulathur, Chennai -603203, TamilNadu (State), India ---------- ----------
2)Dr. R.Naresh
Address of Applicant :Associate Professor, Department of Networking and Communications, SRM Institute of Science and Technology, Kattankulathur, Chennai -603203, TamilNadu (State) ,India ---------- ----------
3)Mrs. U.Padmavathi
Address of Applicant :Department of Computer Science and Engineering National Institute of Technology Puducherry (NIT) Karaikal. India ---------- ----------
4)Dr. M.Vasim babu
Address of Applicant :Professor, Department of Electronics and Communication Engineering, KKR & KSR institute of technology and Sciences, Vinjanampadu, Vatticherukuru Mandal, Guntur-522017, Andhra Pradesh (State), India ---------- ----------
5)Mrs. S.Annie Sheryl
Address of Applicant :Assistant professor, Department of Computer Science and Engineering, Panimalar Institute of Technology, Chennai, TamilNadu (State) ,India ---------- ----------
6)Dr. J. Senthil Kumar
Address of Applicant :Assistant Professor, School of Computer Science and Engineering, System Programming Domain, Lovely Professional University, Phagwara Punjab ---------- ----------
7)Mr. K.Lakshmi Narayanan
Address of Applicant :Research Scholar, Department of Networking and Communications, SRM Institute of Science and Technology, Kattankulathur, Chennai -603203, TamilNadu (State) ,India ---------- ----------
8)Mr. U. Sakthivelu
Address of Applicant :Research Scholar, Department of Networking and Communications, SRM Institute of Science and Technology, Kattankulathur, Chennai, TamilNadu (State) ,India ---------- ----------
9)Dr. R.Suguna
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Bannari Amman Institute of Technology (Autonomous), Sathy - Bhavani State Highway, Alathukombai - Post, Sathyamangalam - 638 401, Erode District, Tamil Nadu, India ---------- ----------
10)Dr. K.Pazhanisamy
Address of Applicant :Teaching Fellow, Department of Computer Science and Engineering, University College of Engineering, Ariyalur, TamilNadu (State),India ---------- ----------

(57) Abstract :
Artificial Intelligence Stairs can be found in almost every home. Everyone will want to make certain that tiny children do not have unsupervised access to these stairwells. because it is exceedingly hazardous. A fall from the top of the stairwell can result in serious injury, if not death. As a result, a baby safety gate is a necessary layer of security in every home. A safety gate, like a pool fence, provides a solid barrier at the bottom or top of your stairs. This prevents a crawling or climbing child from getting themselves into trouble. The Baby Safety Gate allows you to give your child the freedom to play, have fun, explore, and learn while being within easy monitoring range. This innovation suggests a baby gate based on artificial intelligence for giving security and protection to children. It is made up of a gate with an integrated LED light that allows you to see the gate in the dark, as well as Infrared Beam Motion sensor, PIR and IR motion sensors on the sides. When motion is detected within 8 feet, the light will automatically turn on for 05 seconds, ensuring your child's safety at night. It has a temperature sensor that continuously monitors the room temperature, as well as a humidity sensor that detects moisture in the baby's environment. All sensor data inputs are processed using an ANN algorithm with a threshold. If there is any violence against children, an alert will be sent to the parent's cell phone through text message. With this invention, parents will be able to take care of their children on time. It can effortlessly move across rooms, doorways, and stairwells.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020120 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Shot Peening of Coconut Inflorescence Fiber Reinforced Polymer Composites

(51) International classification :C21D0007060000, B24C0001100000, C08J0005040000, B24C0005000000, B24C0007000000
(86) International Application No :PCT// /
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SOUNDARRAJAN KARTHIK
Address of Applicant :1/36, Main Road, Mangalam ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Divya Bajpai Tripathy
Address of Applicant :Galgotias University, Uttar Pradesh 203201 ---------- ----------
2)Dr. Anjali Gupta
Address of Applicant :Galgotias University, Uttar Pradesh 203201 ---------- ----------
3)Mr. Mehul Tiwari
Address of Applicant :Galgotias University, Uttar Pradesh 203201 ---------- ----------
4)Dr.Anupama Singh
Address of Applicant :IMS Engineering College, Uttar Pradesh 201015 ---------- ----------
5)Dr Ashutosh Pandey
Address of Applicant :IMS Engineering College, Uttar Pradesh 201015 ---------- ----------
6)Mr. R. Gowrishankar
Address of Applicant :V. S. B. Engineering College, Karur 639111 ---------- ----------
7)Dr. G. Gnanaparagasam
Address of Applicant :V. S. B. Engineering College, Karur 639111 ---------- ----------
8)Dr.S.Karthik
Address of Applicant :Sri Krishna College of Engineering and Technology, Coimbatore 641008 ---------- ----------

(57) Abstract :
The present invention relates to shot peening of coconut inflorescence fiber extracted from coconut tree. The extracted fibers are subjected to surface treatment before shot peening. The shot peening pressure and peening distance are the controllable factors which has a greater impact on the mechanical properties of the inflorescence fiber. The shot peened fiber reinforced with and without other synthetic or natural fibers based on preferred application. The shot peening balls are most widely employed where the fiber properties are improved by controlling peening pressure and peening distance.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020127 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A METHOD FOR EFFICIENT POWER ALLOCATION IN MULTIPLE INPUT/OUPUT AND SMALL CELL NETWORK SYSTEMS

(51) International classification :H04B0007060000, H04W0052020000, H04W0024020000, H04W0052240000, H04B0007080000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. P D SELVAM
Address of Applicant :PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, PUTTUR - 517583, ANDHRA PRADESH, INDIA. ---------- ----------
2)B SARVESAN
3)M S SUGESH
4)Dr. KOSALENDRA EETHAMAKULA
5)Dr. R RAMESHBABU
6)Dr. R.RAVINDRAIAH
7)Dr. K S VISHVAKSENAN
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. P D SELVAM
Address of Applicant :PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, PUTTUR - 517583, ANDHRA PRADESH, INDIA. ---------- ----------
2)B SARVESAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE ENGINEERING, SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, PUTTUR - 517583, ANDHRA PRADESH, INDIA. ---------- ----------
3)M S SUGESH
Address of Applicant :ASSISTANT PROFESSOR, SREEPATHY INSTITUTE OF MANAGEMENT AND TECHNOLOGY, VAVANOOR, KOOTTANAD, PALAKKAD - 679533, KERALA, INDIA. ---------- ----------
4)Dr. KOSALENDRA EETHAMAKULA
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, PUTTUR - 517583, ANDHRA PRADESH, INDIA. ---------- ----------
5)Dr. R RAMESHBABU
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, V.S.B ENGINEERING COLLEGE, KARUR-639111, TAMIL NADU, INDIA. ---------- ----------
6)Dr. R.RAVINDRAIAH
Address of Applicant :PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, PUTTUR - 517583, ANDHRA PRADESH, INDIA. ---------- ----------
7)Dr. K S VISHVAKSENAN
Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SSN COLLEGE OF ENGINEERING, KALAVAKKAM, CHENNAI - 603110, TAMIL NADU, INDIA. ---------- ----------

(57) Abstract :
The present invention relates to the field of communication and more particularly it discloses an efficient method for allocation of power between various nodes in a multiple input – multiple output and small cell network systems. Ma-MIMO helps in advancing the wireless communication, to incorporate it in the wireless broadband standards such as Wi-Fi and LTE. The use of Ma-MIMO is expected to increase the spectral efficiency for the mobile networks. In this disclosure, these two different technologies are incorporated for improving the 5G wireless communication. The concern of the whole disclosure is to satisfy the user with high quality of service. The effective technologies like Ma- MIMO and small cell are analyzed by employing beamforming and power allocation while operated in full-duplex transmission mode. The simulation is conducted to prove the optimal as well as low-complexity beamforming and power allocation, which is required for improving the total power consumption.

No. of Pages : 27 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020150 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IoT Interoperability and multi-platform integration

(51) International classification :H04L0029080000, H04W0004700000, H04L0029060000, G06F0009540000, H04W0092020000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr. SHAIK MASTHAN BASHA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301. ---------- ----------
2)VIJAYKUMAR R URKUDE
3)P.HARIKRISHNA
4)Dr. M PAVITHRA JYOTHI
5)BEJJAM. BHAGYA SREE
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. SHAIK MASTHAN BASHA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301. ---------- ----------
2)VIJAYKUMAR R URKUDE
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301 ---------- ----------
3)P.HARIKRISHNA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301. ---------- ----------
4)BEJJAM. BHAGYA SREE
Address of Applicant :Associate Professor in ECE Dept. SHADAN WOMEN'S COLLEGE OF ENGINEERING &TECHNOLOGY KHAIRATABAD, HYDERABAD,TS-500004. ---------- ----------
5)Dr. M PAVITHRA JYOTHI
Address of Applicant :Associate Professor in ECE Dept. SHADAN WOMEN'S COLLEGE OF ENGINEERING &TECHNOLOGY KHAIRATABAD, HYDERABAD,TS-500004. ---------- ----------

(57) Abstract :
IoT Interoperability and multi-platform integration The present invention relates to a security interoperability framework technology between heterogeneous Internet of Things (IoT) service platforms, and more particularly, to secure security interoperability between IoT platforms when interworking between heterogeneous IoT platforms is performed. Security interoperability framework and apparatus thereof.

No. of Pages : 18 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020197 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Undecimated wavelet transforming using MATLAB simulation.

(51) International classification :G06F0030200000, G05B0017020000, H04M0003540000, H04N0021422700, G01B0011300000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)P.HARIKRISHNA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR.WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301. ---------- ----------
2)THANAM PULLAIAH
3)SWATHI GANGULA
4)Dr. SHAIK MASTHAN BASHA
5)SUPRAJA MALLISETTY
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)P.HARIKRISHNA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR.WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301. ---------- ----------
2)THANAM PULLAIAH
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301 ---------- ----------
3)Dr. SHAIK MASTHAN BASHA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301 ---------- ----------
4)SUPRAJA MALLISETTY
Address of Applicant :Associate Professor in ECE Dept. RAJARAJESWARI COLLEGE OF ENGINEERING, RAMOHALLI CROSS, KUMBALGODU, MYSORE ROAD,BENGALURU-560074 ---------- ----------
5)SWATHI GANGULA
Address of Applicant :Associate Professor in ECE Dept. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,KONDAPUR,GHATKESAR, HYDERABAD,TS-501301 ---------- ----------

(57) Abstract :
The Present inventions discloses a Undecimated wavelet transforming using MATLAB simulation. Wherein, A simulation method based on MATLAB, which is characterized by including: According to the preset first sampling period, save the intermediate data in the simulation process; The intermediate data is displayed according to a preset second sampling period.

No. of Pages : 14 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020293 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENHANCING TALENT PERFORMANCE MANAGEMENT IN ORGANIZATIONS BY USING BIG-DATA

(51) International classification	:G06Q0010060000, G06Q0010100000, G06F0008610000, G06F0030170000, G06F0016900000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr K.Rambabu
Address of Applicant :Assistant Professor, Department of management studies, Sri vasavi engineering college, Pedatadepalli, Tadepalligudem, Andhra Pradesh - 534101 ---------- ----------
2)Mallesha M
3)Dr. Pramod M S
4)Vani V G
5)Mohammed Roshif U
6)Renu
7)Ajai Singh
8)Girish M
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr K.Rambabu
Address of Applicant :Assistant Professor, Department of management studies, Sri vasavi engineering college, Pedatadepalli, Tadepalligudem, Andhra Pradesh - 534101 ---------- ----------
2)Mallesha M
Address of Applicant :Assistant Professor, Department of Computer Science & Engineering, Gopalan College of Engineering and Management, Bengaluru, Karnataka - 560048 ---------- ----------
3)Dr. Pramod M S
Address of Applicant :Associate Professor, Electronics and Communication Engineering Department, PES University, Electronic City Campus, Hosur Rd, Bengaluru, Karnataka - 560100 ---------- ----------
4)Vani V G
Address of Applicant :Assistant Professor, CSE Department, Government Engineering College, Kushalnagar, Karnataka - 571234 ---------- ----------
5)Mohammed Roshif U
Address of Applicant :Assistant Professor, Commerce and Management Studies Department, Malabar College of Advanced Studies, Vengara, Kerala - 676519 ---------- ----------
6)Renu
Address of Applicant :Researcher, Department of Management & Humanities, Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab - 148106 ---------- ----------
7)Ajai Singh
Address of Applicant :Head HR & Compliances, HR Department, Doon Business School Group, Dehradun, Uttarakhand - 248011 ---------- ----------
8)Girish M
Address of Applicant :Assistant Professor, Computer science and engineering Department, Gopalan college of engineering and management, Bangalore, Karnataka - 560048 ---------- ----------

(57) Abstract :
This paper completes the performance management database design and B/S architectural system development by analysing the human resource system needs of a company. Struts2, Spring, Hibernate, and Extjs frameworks, based on VC framework theory, are used to design the technical framework of the system and to implement the basic features of the talent performance management system. This includes a look at how big data can be used to improve enterprise performance management, as well as an overview of each module's design and how it was developed. The database outline design begins with the entity relationship and analyses the data entities and accompanying relationships that are required for the system function to be implemented. Finally, a portion of the system code and test results are supplied, and the tests demonstrate the usefulness of the proposed management optimization strategy.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2022

(21) Application No.202241020325 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IOT BASED TUBERCULOSIS CONTROLLING AND ITS OUTCOME IN DIRECTLY OBSERVED THERAPY SYSTEM USING MACHINE LEARNING ALGORITHM IN MEDICAL CENTRE

(51) International classification :G06K0009620000, G06N0020000000, G16H0050200000, G16B0040000000, G06N0005000000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr Harishchander Anandaram
Address of Applicant :Assistant Professor Centre for Excellence in Computational Engineering and Networking Amrita VishwaVidyapeetham Coimbatore Tamil Nadu India ---------- ----------
2)Dr. K Satyanarayan Reddy
3)Prof. Mrunalini Buradkar
4)Dr. Brijesh Sathian
5)Dr. Aarti
6)Dr. Hemlata Sinha
7)Dr. A. Mohathasim Billah
8)D Jayanarayana reddy
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr Harishchander Anandaram
Address of Applicant :Assistant Professor Centre for Excellence in Computational Engineering and Networking Amrita VishwaVidyapeetham Coimbatore Tamil Nadu India ---------- ----------
2)Dr. K Satyanarayan Reddy
Address of Applicant :Principal, Cambridge Institute of Technology North Campus Kundana, Bangalore 562 110.Karnataka. ---------- ----------
3)Prof. Mrunalini Buradkar
Address of Applicant :Assistant Professor 35,shri shiv shaktigruhnirman society2, khamla Sonegoan-2, nagpur-440025 ---------- ----------
4)Dr. Brijesh Sathian
Address of Applicant :Scientist, Geriatrics and Long term care Department, Rumailah Hospital, Hamad Medical Corporation, Doha, Qatar, P. O BOX 3050, Doha, Qatar ---------- ----------
5)Dr. Aarti
Address of Applicant :Assistant Professor, Department of Computer Science and Information Technology, Central University of Haryana ---------- ----------
6)Dr. Hemlata Sinha
Address of Applicant :Associate Professor at Shri Shankaracharya Institute of Professional Management and Technology, Raipur ---------- ----------
7)Dr. A. Mohathasim Billah
Address of Applicant :Professor and Head, Department of Pharmacy, MRM College of Pharmacy, Ibrahimpatnam,(M) Hyderabad- 501510 ---------- ----------
8)D Jayanarayana reddy
Address of Applicant :Research Scholar, Jntua anatapuramu, Anatapur, AP. ---------- ----------

(57) Abstract :
IoT based Tuberculosis controlling and its outcome in Directly Observed Therapy System using Machine Learning algorithm in medical centre Abstract: Patients must finish their therapy to avoid developing tuberculosis for an extended period of time, relapsing, or requiring more expensive and time-consuming treatment, as multidrug-resistant tuberculosis is more difficult to treat. Approximately half of all patients do not follow the suggested treatment plan. Individuals suffering from tuberculosis should seek treatment and assistance from the WHO's global tuberculosis strategy. It may be necessary to create a model that predicts the efficacy of DOTS therapy. This model can then be used to assess how many services and supports should be provided in accordance with the plan. The goal of this study was to use and compare machine learning algorithms for predicting how tuberculosis treatment will work. The following phase included building and testing six models. Using feature data, they created and evaluated decision trees, ANNs, RBFs, Bayesian networks, and SVMs (SVM). Using data from the training and testing sets, the models were evaluated based on their accuracy in predicting what would happen, the F-measure, recall, and other variables. These other top algorithms, termed the artificial neural network (ANN), binary classifier, linear classifier, random forest, and support vector machine, received 62.06 percent, 578.88 percent, and support vector machine, respectively. This approach, however, was proven to be the most accurate. This is due to the sheer volume and dispersion of data. Patient care and surveillance can be enhanced if the class of each tuberculosis case is examined. This is a good idea for improving DOTS therapy in general.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020373 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DETECTING AND DIAGNOSING OF CANCER USING A CONVOLUTIONAL NEURAL NETWORK SYSTEM

(51) International classification :G01N0033574000, C12M0001000000, C12Q0001688600, B01D0067000000, G01N0033500000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Holy Cross College (Autonomous)
Address of Applicant :Back Side of Chennai Silks, Madurai Rd, Tharanallur, Teppakulam, Tamil Nadu 620002 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. W. Ritha
Address of Applicant :Assistant Professor, PG and Research Department of Mathematics, Holy Cross College (Autonomous), Tiruchirappalli – 620002, Tamilnadu, India. ---------- ----------
2)Dr. J. Merline Vinotha
Address of Applicant :Assistant Professor, PG and Research Department of Mathematics, Holy Cross College (Autonomous), Tiruchirappalli – 620002, Tamilnadu, India. ---------- ----------
3)Dr. I. Antonitte Vinoline
Address of Applicant :Assistant Professor, PG and Research Department of Mathematics, Holy Cross College (Autonomous), Tiruchirappalli – 620002, Tamilnadu, India. ---------- ----------
4)Dr. Nivetha Martin
Address of Applicant :Assistant Professor, Department of Mathematics, Holy Cross College (Autonomous), Tiruchirappalli – 620002, Tamilnadu, India. ---------- ----------

(57) Abstract :
According to the present invention, the proposed Devices and methods for diagnosing and classifying cancer in a person have been revealed in the current disclosure. After a person's cells have been separated from the rest of the body, they may be characterized using microfilters and devices.

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020374 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR MARKETING AND FINANCIAL ANALYTICS AND PROBLEMS FACED BY SMALL SCALE INDUSTRIES

(51) International classification :G06Q0030020000, G06Q0010100000, G06Q0010060000, C07K0014525000, G06Q0050260000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. R. Gopinath
Address of Applicant :BSNL Engineer &D.Litt. (Business Administration)-Researcher, Madurai Kamaraj University, Palkalai Nagar, Madurai - 625021 ---------- ----------
2)Dr. R. Saminathan
3)Dr. Sasikala M S
4)Dr.K.P.Balakrishnan
5)Dr. Pallavi Kiran Ingale
6)Dr. Ranjeeta Tiwari Mishra
7)Dr.N.Anjaneya Sharma
8)Dr. Babu V
9)Ms. Sruthi S
10)Dr. D. Anitha
11)Mr. Jagadish N
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. R. Gopinath
Address of Applicant :BSNL Engineer &D.Litt. (Business Administration)-Researcher, Madurai Kamaraj University, Palkalai Nagar, Madurai - 625021 ---------- ----------
2)Dr. R. Saminathan
Address of Applicant :Associate Professor & Head, PG & Research Department of Commerce, Government Arts and Science College, (Formerly Bharathidasan University Constituent College) Kumulur, Lalgudi, Tiruchirappalli (Dt)- 621 712 ---------- ----------
3)Dr. Sasikala M S
Address of Applicant :Associate Professor, Department of Commerce Acharya Institute of Graduate Studies, Soldevahalli, Bengaluru- 560 107 ---------- ----------
4)Dr.K.P.Balakrishnan
Address of Applicant :Principal, Nifttea College of Knitwear Fashion, East of Tekic, SIDCO, Mudalipalayam, Tirupur- 641 606 ---------- ----------
5)Dr. Pallavi Kiran Ingale
Address of Applicant :Assistant Professor, Department of Centre for Management Education, Vaikunth Mehta National Institute of Cooperative Management, Ganeshkhind Road,Near Pune University, Pune- 411007 ---------- ----------
6)Dr. Ranjeeta Tiwari Mishra
Address of Applicant :Assistant Professor, Department of Management RSR Rungta College of Engineering and Technology, Rungta Knowledge Campus, KohkaKurud, Bhilai- 490024 ---------- ----------
7)Dr.N.Anjaneya Sharma
Address of Applicant :Professor and Head, Department of Management, RSR Rungta College of Engineering and Technology, Rungta Knowledge Campus, KohkaKurud, Bhilai- 490024 ---------- ----------
8)Dr. Babu V
Address of Applicant :Associate Professor & HOD-Commerce & Management ST PAULS COLLEGE, Nagasandra Post, Bangalore- 560073 ---------- ----------
9)Ms. Sruthi S
Address of Applicant :Assistant Professor, Department of Commerce, Gregorian College of Advanced Studies, Trivandrum, Kerala- 695035 ---------- ----------
10)Dr. D. Anitha
Address of Applicant :Assistant Professor, Department of Commerce (Banking & Insurance), PSG College of Arts & Science, Sitra, Civilerodrome Post, Coimbatore- 641014 ---------- ----------
11)Mr. Jagadish N
Address of Applicant :Assistant Professor, Department of Commerce and Management, ST PAULS COLLEGE , Nelagadaranahalli, Nagasandra post , Bangalore- 560073 ---------- ----------

(57) Abstract :
This work mainly deals with the empirical findings on marketing problems faced by SSIs in Madurai district and also the strategies adopted by the sample units to combat them. The results and discussions concerning the topic of study are evaluated here by the investigator and reported in this work. Since the study has been undertaken with the central purpose of knowing how well the small businesses are working despite the marketing problems, it goes without saying that the perceptions of the respondents are to be evaluated on the basis of selected parameters. In this work investigator has evaluated the various facets of SSIs such as entrepreneurial talent, production capacity and its utilization, financial commitment, marketing problems, product planning and quality control, promotion, transportation, pricing, distribution, role of government policy, etc. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5]

No. of Pages : 29 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020375 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DESIGN AND DEVELOPMENT OF SMART DRONE FOR AGRICULTURAL SPRAYER

(51) International classification :B64C0039020000, A01M0007000000, A01C0021000000, B64D0001180000, A01C0023040000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Kumaraguru College of Technology
Address of Applicant :Kumaraguru College of Technology, Coimbatore, India ---------- ----------
2)Mr. J Darshan Kumar
3)Mr. M Mathankumar
4)Dr. S A Pasupathy
5)Ms. G Anushree
6)Dr. N Vinothkumar
7)Dr. Rani Thottungal
8)Mr. S Suryaprakash
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mr. J Darshan Kumar
Address of Applicant :Assistant Professor, Department of Aeronautical Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
2)Mr. M Mathankumar
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
3)Dr. S A Pasupathy
Address of Applicant :Professor & Head, Department of Electronics and Communication Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
4)Ms. G Anushree
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
5)Dr. N Vinothkumar
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
6)Dr. Rani Thottungal
Address of Applicant :Professor, Department of Electronics and Communication Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------
7)Mr. S Suryaprakash
Address of Applicant :Assistant Professor, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore, India ---------- ----------

(57) Abstract :
Among the components of a drone for spraying liquid over the field, the crop is: a frame with a slender, rigid beam in the middle and two base structures at the two ends, a rigid tube with an array of nozzles on elongated stems, the rigid tube being suspended below the beam structure with retractable wires, at least three propellers on motors with arms that are rotatably mounted to each of the two base structures of the frame, a power source, at least one distance The drone is designed to spray liquid across a vast strip of the field with great efficiency, accuracy, and safety, as well as with minimized drift of the sprays from the drone.

No. of Pages : 20 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020376 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Artificial Intelligence Based Wind Solar Diesel Hybrid Electric Vehicle

(51) International classification	:B60W0010060000, G06N0003080000, B60W0050000000, B60W0020110000, G05B0013020000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. S. Raviraja
Address of Applicant :Professor and Dean, Faculty of Computer Studies & IT, University of Garden City, Khartoum, Sudan, Principal Scientist, Royal Research Foundation (R), Mysore, India ---------- ----------
2)Dr. Bharathi P. T
3)Dr. Prathik Jain S
4)Mr. Abhishek A R
5)Mr. Chandru B G
6)Dr. Manish Shrimali
7)Dr. Tabassum Ara
8)Mr. Shoaib Kamal
9)Dr. Sanjana Prasad
10)Mr. Ayan Banik
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. S. Raviraja
Address of Applicant :Professor and Dean, Faculty of Computer Studies & IT, University of Garden City, Khartoum, Sudan, Principal Scientist, Royal Research Foundation (R), Mysore, India ---------- ----------
2)Dr. Bharathi P. T
Address of Applicant :Assistant Professor, Department of Master of Computer Applications, Siddaganga Institute of Technology, Tumakuru, Karnataka 572 103, India ---------- ----------
3)Dr. Prathik Jain S
Address of Applicant :Assistant Professor, Department of Aeronautical Engineering, Dayananda Sagar College of Engineering, Bengaluru, Karnataka 560078, India ---------- ----------
4)Mr. Abhishek A R
Address of Applicant :Senior Executive, Department of Wearhouse, Flipkart, Founding member, Royal Research Foundation, Mysuru, Karnataka, India ---------- ----------
5)Mr. Chandru B G
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Rao Bahadur Y Mahabaleswarappa Engineering College, Ballari, Karnataka 583104, India ---------- ----------
6)Dr. Manish Shrimali
Address of Applicant :Associate Professor, Department of Computer Science and Information Technology, Janardan Rai Nagar Rajasthan Vidyapeeth (Deemed to be University) Udaipur, Rajasthan 313001, India ---------- ----------
7)Dr. Tabassum Ara
Address of Applicant :Professor and Head, Department of Artificial Intelligence and Machine Learning, HKBK College of Engineering, Bengaluru, Karnataka, 560046, India ---------- ----------
8)Mr. Shoaib Kamal
Address of Applicant :Associate Professor, Department of Electronics and Communication Engineering, MVJ College of Engineering, Bengaluru, Karnataka 560067, India ---------- ----------
9)Dr. Sanjana Prasad
Address of Applicant :Associate Professor, Department of Electronics and Communication Engineering, HKBK College of Engineering, Bengaluru, Karnataka 560045, India ---------- ----------
10)Mr. Ayan Banik
Address of Applicant :Student, National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata, West Bengal 700106, India ---------- ----------

(57) Abstract :
A control technique for a hybrid electric vehicle that includes an electric motor, a lithium-ion battery, and an internal combustion engine is described in this invention. The control technique, which uses an adaptive control unit with an artificial neural network, increases fuel efficiency and decreases emissions while maintaining enough acceleration under various driving circumstances. On a pre-processed training set based on the highest fuel economy of several control techniques and varied driving profiles, the artificial neural network is taught to recognize patterns in the data. A training algorithm and a learning algorithm are used in the artificial neural network training. Additionally, the invention provides a method of running a hybrid electric vehicle that employs an adaptive control technique that is implemented via an artificial neural network.

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR MULTI-MODAL BASED INTEREST / ANXIETY IDENTIFICATION OF AUTISTIC CHILDREN VIA EYE GAZE AND FACIAL EXPRESSION EXPLORATION

(51) International classification :G06K0009000000, G06F0003010000, G08G0001160000, B60W0030095000, G05D0001020000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.S.P.Abirami
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Coimbatore Institute of Technology, Coimbatore-641014 ---------- ----------
2)Dr. G.Kousalya
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.S.P.Abirami
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Coimbatore Institute of Technology, Coimbatore-641014 ---------- ----------
2)Dr. G.Kousalya
Address of Applicant :Professor and Head, Department of Computer Science and Engineering, Coimbatore Institute of Technology, Coimbatore-641014 ---------- ----------

(57) Abstract :
[032] The present invention discloses a Multi-Modal based Interest / Anxiety Identification of Autistic Children via Eye Gaze and Facial Expression Exploration. The system includes, but not limited to, at least one processing unit; a non-transitory computer-readable media storing instructions which, when executed by the one or more processors, cause: classification of facial expression, which is made by building multi class linear kernel SVM. The identified expression is then appended with the gaze analysis to ensure that there is no distracted or altered gaze from the children. With the advent of this expression, the interest on various objects could be identified. The system also is configured to analyse the unease situation in facing an unconcerned/ dispassionate object which could be avoided in order to reduce the nervousness in the children. The system could be further improved to run on a stream analysis over a time period to make realistic analysis. Accompanied Drawing [FIG. 1]

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020381 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Real Time Agriculture Field Monitoring System Using IOT

(51) International classification :G06Q0050020000, A01G0025160000, A01G0007000000, G06F0011300000, H04N0007180000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)China Raju Manda
Address of Applicant :Assistant Professor (contract) / ECE, JNTU Gurujada Vizianagaram, Viziangaram – 535003. ---------- ----------
2)Dr .P Geetha
3)Ms. R K Kapilavani
4)Dr. V.Chelladurai
5)P.Malathi
6)T.Manochandar
7)Mr. Kannadasan B
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)China Raju Manda
Address of Applicant :Assistant Professor (contract) / ECE, JNTU Gurujada Vizianagaram, Viziangaram – 535003. ---------- ----------
2)Dr .P Geetha
Address of Applicant :Assistant Professor / CSE, Sri Venkateswara College of Engineering, Post Bag No.1 , Pennalur Village, Sriperumbudur , Chennai Tk. - 602 117. ---------- ----------
3)Ms. R K Kapilavani
Address of Applicant :Assistant Professor / CSE , Sri Venkateswara College of Engineering , Post Bag No.1,Pennalur Village, Sriperumbudur, Chennai - 602 117. ---------- ----------
4)Dr. V.Chelladurai
Address of Applicant :Associate Professor, Department of Agriculture Engineering, Bannari Amman Institute of Technology, Sathya mangalam, Erode, TN 638 409. ---------- ----------
5)P.Malathi
Address of Applicant :Assistant Professor, CSE, Saveetha School of Engineering, Chennai, Tamilnadu. ---------- ----------
6)T.Manochandar
Address of Applicant :Assistant Professor/ECE, Surya Group of Institutions-School of Engineering and Technology, Surya Nagar, Vikiravandi-605652. ---------- ----------
7)Mr. Kannadasan B
Address of Applicant :Department of civil Engg, B S Abdur Rahman Crescent Institute of Science and Technology, GST Road, Vandalur, Chennai – 600048. ---------- ----------

(57) Abstract :
Agriculture is becoming an increasingly significant expanding industry around the globe as the world's population continues to rise. The agricultural industry has a significant challenge in increasing farm production and quality of farming without the need for constant manual monitoring to fulfill the continuously increasing demand for food. Aside from the growing population, climate change is also a major source of worry in the agriculture industry nowadays. The goal of this study is to present a smart farming strategy based on the Internet of Things (IoT) that can be used to cope with unfavorable scenarios. A smart farming approach may be used, which provides high precision crop management, the gathering of important data, and the automation of the agricultural process. A smart agricultural field monitoring system that monitors soil humidity and temperature are presented in this research. After analyzing the detected data, it automatically performs the appropriate actions depending on the values it has determined without the need for human participation. The temperature and wetness of the soil are monitored here, and the results obtained are saved in the ThingSpeak cloud for further study.

No. of Pages : 22 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020392 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CERVICAL CANCER SELF-TEST KIT

(51) International classification :H04N0005225000, H04N0001000000, A61K0036730000, G08B0013196000, A61B0001040000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN
Address of Applicant :BHARATHI PARK ROAD TATABAD, FOREST COLLEGE CAMPUS SAIBABA COLONY COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. PARTHASARATHY SUBASHINI
Address of Applicant :PROFESSOR OF COMPUTER SCIENCE, CENTRE FOR MACHINE LEARNING AND INTELLIGENCE, SCHOOL OF PHYSICAL SCIENCES & COMPUTATIONAL SCIENCES, AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------
2)DR.THOOKANAYAKANPALAYAM THYAGARAJAN DHIVYAPRABHA
Address of Applicant :RESEARCH ASSOCIATE, DST-CURIE-AI, CENTRE FOR MACHINE LEARNING AND INTELLIGENCE, AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------
3)MS. MALIAKKAL BABU JENNYFER SUSAN
Address of Applicant :RESEARCH SCHOLAR, DEPARTMENT OF COMPUTER SCIENCE, AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------

(57) Abstract :
TITLE: CERVICAL CANCER SELF-TEST KIT APPLICANT: AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN ABSTRACT The present invention discloses a Cervical Cancer Self-Test Kit to operate and conduct self-screening test individually upon placing the kit on a tripod stand in front of a vagina and configured to capture images and transfer to a configured email account. The Cervical Cancer Self-Test Kit of the present invention comprises of: (a) a container housed with Raspberry pi board, rechargeable battery, WiFi, and alarm in which the rechargeable battery, WiFi, and alarm are coupled with the Raspberry pi board and the Raspberry pi board is embedded with python codes and configured to capture cervix image and upload cervix image to the configured email address through the WiFi and produces alarm when cervical image is captured and transfer the images to the configured email account; (b) a camera, LED light and power button (on/off) are adapted to dispose on front side of the container and configured to integrate with the Raspberry pi board in which the Raspberry pi board is programmed to acquire and upload the captured cervix image to the configured email address through Wi-Fi after 10 seconds when power button is switch on; (c) a flexible metallic stick positioned on back side of the container and adapted to mount rotatable and portable LCD display to view cervix images in which the LCD display is coupled with the Raspberry pi board through USB cable; (d) a capture button coupled with the Raspberry pi board through connecting wires and configured to capture cervix images upon pressing the capture button when camera lens is correctly positioned in the cervix region.

No. of Pages : 27 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020393 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IoT ENABLED AI SYSTEM FOR DEVISING WATER CONSERVATION

(51) International classification :H04L0029080000, G08B0025000000, G06F0003010000, F24D0019100000, E03B0007070000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN
Address of Applicant :BHARATHI PARK ROAD TATABAD, FOREST COLLEGE CAMPUS SAIBABA COLONY COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)DR. MARIMUTHU RAMASWAMY THILAKAM
Address of Applicant :DEPARTMENT OF RESOURCE MANAGEMENT AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------
2)MRS.JOSEPH RATHNAMANI SOFIA JANNET
Address of Applicant :DEPARTMENT OF RESOURCE MANAGEMENT AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN, COIMBATORE TAMIL NADU INDIA 641043 ---------- ----------

(57) Abstract :
TITLE: IoT ENABLED AI SYSTEM FOR DEVISING WATER CONSERVATION APPLICANT: AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN ABSTRACT The present invention discloses an IoT Enabled AI System for Devising Water Conservation comprises of a microcontroller[1] adapted to engaged with (a) plurality of sensors[5] positioned on plurality of taps to be monitored and adapted to sense dispensing water and communicate signal to the micro controller[1]in which the microcontroller[1] is configured to send alert messages to a registered computing system if dispensing water is continued beyond inbuilt fixed period of time; (b) kill switch adapted to activate by user if continuous discharge of water is required upon receiving alert message in which the microcontroller[1]continuously allow the dispensing of water; (c) tap valve[2] of the plurality of taps configured to close, if no notification is received after sending alert message to a registered computing system thereby automatically stopping the dispensing of water; (d) LCD display[3]adapted to display daily water usage; comparison data of water consumption rate of plurality of days; water pipes with the highest water usage by the microcontroller[1] after processing and configured to send notification to the registered computing system upon request from user; (e) GSM/GPRS MODULE[6] acts as an interface between the microcontroller[1] and the registered computing system; (f) Power supply module[7] configured to activate the claimed IoT Enabled AI System.

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020401 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AI BASED FIRE FIGHTING ROBOTAI BASED FIRE FIGHTING ROBOT

(51) International classification	:A62C0003020000, G06Q0010040000, G09B0019000000, A62C0027000000, G06N0003000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. A.NARASIMA VENKATESH
Address of Applicant :PROFESSOR AND HEAD OF THE DEPARTMENT DEPARTMENT OF HRM AND GENERAL MANAGEMENT ISBR BUSINESS SCHOOL BANGALORE -560100, KARNATAKA ,INDIA ---------- ----------
2)Dr. R. SURESH KUMAR
3)Mr. B.VIJAYA PRAKASH
4)Dr. A. ARUN NEGEMIYA
5)Dr. RADHIKA BASKAR
6)Mr. S.DINESHKUMAR
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. A.NARASIMA VENKATESH
Address of Applicant :PROFESSOR AND HEAD OF THE DEPARTMENT DEPARTMENT OF HRM AND GENERAL MANAGEMENT ISBR BUSINESS SCHOOL BANGALORE -560100, KARNATAKA ,INDIA ---------- ----------
2)Dr. R. SURESH KUMAR
Address of Applicant :PROFESSOR AND HEAD OF THE DEPARTMENT DEPARTMENT OF MECHANICAL ENGINEERING SRI ESHWAR COLLEGE OF ENGINEERING COIMBATORE TAMILNADU 641202 ---------- ----------
3)Mr. B.VIJAYA PRAKASH
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY COIMBATORE TAMILNADU 641062 ---------- ----------
4)Dr. A. ARUN NEGEMIYA
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY COIMBATORE TAMILNADU 641062 ---------- ----------
5)Dr. RADHIKA BASKAR
Address of Applicant :PROFESSOR DEPARTMENT OF WIRELESS COMMUNICATION, INSTITUTE OF ECE SAVEETHA SCHOOL OF ENGINEERING, SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES CHENNAI TAMIL NADU 602105 ---------- ----------
6)Mr. S.DINESHKUMAR
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING M.KUMARASAMY COLLEGE OF ENGINEERING KARUR TAMILNADU 639113 ---------- ----------

(57) Abstract :
A fire can begin numerous conceivable outcomes in an industry or in any far off region. It is a most dire outcome imaginable, causing weighty misfortunes monetarily as well as obliterating regions encompassing it. Advanced mechanics is the arising answer for safeguard human lives what's more, their abundance and environmental elements. The point here is to plan a fire indicator and douser robot utilizing RASPBERRY PI 3 MODEL B Microcontroller. A robot fit for battling a mimicked family fire will be planned and fabricated. The firefighting robot is incorporated with installed framework. Model framework is intended to recognize and douse fire. Robots intended to track down a fire, before it seethes wild, would one day be able to work with firefighters incredibly diminishing the gamble of injury to casualties. The undertaking will help produce interests as well as developments in the fields of advanced mechanics while running after a reasonable and reachable answer for save lives and alleviate the gamble of property harm. Any person from can likewise work it from a distance wherever in the world utilizing versatile telephone or a PC.. Putting out fires robot is utilized to monitor human lives, abundance, and environmental elements from the fire mishaps. This putting out fires robot project is an progressed project for designing understudies, who are keen on advanced mechanics. This project joins RF innovation for distant activity and furthermore utilizes microcontrollers. A putting out fires robot is fit for identifying fire if a house bursts into flames while somebody in the house is either dozing or not present in the house. The robot, which we have proposed in this paper, has found its application in fire soaking activities in the midst of fire setbacks where the probability of the service members to enter the fire-slanted area is less.

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020406 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : An apparatus for removal of Sticky Iron Ore from Railway Wagons

(51) International classification	:H02K0053000000, A63B0022060000, B08B0001040000, H02K0007020000, H02K0047040000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
Address of Applicant :No.42, Avadi – Vel Tech Road, Avadi, Chennai - 600 062 Tamil Nadu, India ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. K. Raja
Address of Applicant :No 42, Avadi - VelTech Road, Avadi, Chennai -600062 Tamil Nadu, India ---------- ----------
2)Dr. Rupesh P L
Address of Applicant :No 42, Avadi - VelTech Road, Avadi, Chennai -600062 Tamil Nadu, India ---------- ----------

(57) Abstract :
ABSTRACT An apparatus for removal of Sticky Iron Ore from Railway Wagons An apparatus for removal of Sticky Iron Ore from Railway Wagons comprising of a main battery connected to a motor directly if the motor is a DC motor, or through an DC to AC converter if the motor is an AC motor, the motor attached with a small attachment of mild steel plate including a twisted cup brush along its four sides, the motor may be further connected to a flywheel with the help of a couple fixed with nut and bolt, the flywheel is further connected to the generator with the help of a belt drive, so that the energy driven by the flywheel is given to the generator to produce the electrical energy.

No. of Pages : 11 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020435 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ABRASIVE WATER JET MACHINING TOOL AND A PROCESS THEREOF

(51) International classification :B24C0001040000, B24C0009000000, B24C0007000000, B24C0001000000, B24C0011000000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
Address of Applicant :No.42, Avadi – Vel Tech Road, Avadi, Chennai - 600 062 Tamil Nadu, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. N. Yuvaraj
Address of Applicant :No.42, Avadi – Vel Tech Road, Avadi, Chennai - 600 062 Tamil Nadu, India. ---------- ----------
2)Dr.K.Balaji
Address of Applicant :No.42, Avadi – Vel Tech Road, Avadi, Chennai - 600 062 Tamil Nadu, India. ---------- ----------

(57) Abstract :
ABSTRACT ABRASIVE WATER JET MACHINING TOOL AND A PROCESS THEREOF Industrial waste obtained after the sand blasting from the industry have been undergone for various examinations before it is used as an abrasive during Abrasive Water Jet Machining (AWJM) process. Particularly a machining tool and process is disclosed.

No. of Pages : 10 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020469 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : An AI and IOT based smart agriculture monitoring system

(51) International classification :A01G0025160000, H04L0029080000, G06K0017000000, A01G0025020000, A01C0023040000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. P. Pirakatheeswari
Address of Applicant :Assistant Professor, Department of B. Com – PA, Sri Ramakrishna College of Arts and Science (Autonomous), Coimbatore 641 006, Tamil Nadu, India ---------- ----------
2)Dr. N. Chitra
3)Dr. P. Vidhya
4)Dr. A. Arun
5)Dr. B. Merceline Anitha
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. P. Pirakatheeswari
Address of Applicant :Assistant Professor, Department of B. Com – PA, Sri Ramakrishna College of Arts and Science (Autonomous), Coimbatore 641 006, Tamil Nadu, India ---------- ----------
2)Dr. N. Chitra
Address of Applicant :Head & Associate Professor, Department of B Com – CA, Sree Saraswati Thyagaraja College (Autonomous), Pollachi, Tamil Nadu 642107, India ---------- ----------
3)Dr. P. Vidhya
Address of Applicant :Assistant Professor, Department of B Com – CA, Sri Ramakrishna College of Arts and Science (Autonomous), Coimbatore 641 006, Tamil Nadu, India ---------- ----------
4)Dr. A. Arun
Address of Applicant :Associate Professor, Department of MBA, Sree Saraswati Thyagaraja College (Autonomous), Pollachi, Tamil Nadu 642107, India ---------- ----------
5)Dr. B. Merceline Anitha
Address of Applicant :Assistant Professor, Department of MBA, Sri Ramakrishna College of Arts and Science (Autonomous), Coimbatore 641 006, Tamil Nadu, India ---------- ----------

(57) Abstract :
The innovation is a cloud-based intelligent irrigation system that uses artificial intelligence. Connected to the Internet of Things terminal management master controller with enabled Artificial Intelligence are irrigation devices, sensors, and an Internet of Things terminal management controller with an Internet of Things terminal management controller. A wireless network connects the Internet of Things terminal management controller to the intelligent irrigation cloud data center, which is a hub for the irrigation system. A user connects to the intelligent irrigation cloud data center using his or her username and password. Many technologies are used in this system: cloud computing, the Internet of Things (IoT), big data, mobile applications, and artificial intelligence technology. The system is simple, easy, and convenient; the timeliness and network convenience are excellent; the reliability is high; the transmission rate is fast, and an advanced Internet of Things intelligent irrigation system based on cloud computing is provided for the application and promotion.

No. of Pages : 25 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020482 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PREFABRICATED WALL PANELS USING GEOPOLYMER AGGREGATE CONCRETE

(51) International classification	:C04B0028000000, E04C0002040000, E04C0002520000, E04C0002340000, B65D0090020000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology
Address of Applicant :No.42, Avadi – Vel Tech Road, Avadi, Chennai - 600 062 Tamil Nadu, India. ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Udhaya Kumar. T
Address of Applicant :102, Block 2, Staff Quarters, Vel Tech road, Vellanur, Avadi, Chennai - 600 062. ---------- ----------
2)Jayadurgalakshmi M
Address of Applicant :102, Block 2, Staff Quarters, Vel Tech road, Vellanur, Avadi, Chennai - 600 062. ---------- ----------

(57) Abstract :
ABSTRACT PREFABRICATED WALL PANELS USING GEOPOLYMER AGGREGATE CONCRETE Method of making geo-polymer stones, and method of making pre-cast panels using geo-polymer stones is disclosed. These panels once ready, are taken onsite to be assembled, and shotcrete or concrete, depending on panel used, is then used to sandwich and cover panels, forming a monolithic structure. Walls thinner by conventional building by 50% which increases. Low weight of panels means that there is reduced loading on building. This means that cost savings can be made on structural elements and foundations. Geopolymer Aggregate Concrete is fire proof and it provides good thermal and acoustic (sound) insulation.

No. of Pages : 26 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020511 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTEGRATED LIBRARY MANAGEMENT SYSTEM FOR VARIOUS PUBLIC AND PRIVATE INSTITUTIONS BASED ON INTERNET OF THINGS SENSOR

(51) International classification	:H04L0029080000, H04W0008200000, G06Q0050260000, H04N0005225000, F24F0007060000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr.A.Senthamilselvi
Address of Applicant :Librarian and Head, PG Department of Library and information Science, Holy Cross College (Autonomous), Tiruchirappalli ---------- ----------
2)Dr. Kuldeep Prabhakarrao Pawar
3)Dr. Parminder Singh
4)Dr. Shweta Nanda
5)Madhusmita Sahu
6)Udit Mamodiya
7)Dr. Aditya Vidyarthi
8)Sujeet Singh Bhadouria
9)Dr. Dayananda P
10)Dr. Niranjanamurthy M
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.A.Senthamilselvi
Address of Applicant :Librarian and Head, PG Department of Library and information Science, Holy Cross College (Autonomous), Tiruchirappalli ---------- ----------
2)Dr. Kuldeep Prabhakarrao Pawar
Address of Applicant :Librarian, Library & Knowledge Resource Centre, Arihant College of Arts, Commerce & Science, Bavdhan, Pune, India ---------- ----------
3)Dr. Parminder Singh
Address of Applicant :Deputy Librarian/Assistance Professor, Library and Information Science, Desh Bhagat University, Amloh Road, Mandi Gobindgar ---------- ----------
4)Dr. Shweta Nanda
Address of Applicant :Associate Professor, Amity International Business School, Amity University, Noida, Uttar Pradesh, India ---------- ----------
5)Madhusmita Sahu
Address of Applicant :Assistant Professor, Department of Computer Application, Institute of Technical Education and Research (ITER), Siksha'O'Anusandhan (Deemed to be)University, Bhubaneswar, Odisha, India ---------- ----------
6)Udit Mamodiya
Address of Applicant :Assistant Professor, Department of Electrical Engineering, Co-coordinator of AICTE-IDEA LAB, Poornima Institute of Engineering and Technology, Jaipur, Rajasthan, India ---------- ----------
7)Dr. Aditya Vidyarthi
Address of Applicant :Professor, Department of Information Technology, Institute of Technology & Management, Gwalior, Madhya Pradesh, India ---------- ----------
8)Sujeet Singh Bhadouria
Address of Applicant :Assistant Professor, Department of Information Technology, Institute of Technology and Management, Gwalior, Madhya Pradesh, India ---------- ----------
9)Dr. Dayananda P
Address of Applicant :Professor, Department of Information Science and Engineering, J.S.S. Academy of Technical Education(Affiliated to VTU, Karnataka), Bengaluru, India ---------- ----------
10)Dr. Niranjanamurthy M
Address of Applicant :Assistant Professor, Department of Computer Applications, M S Ramaiah Institute of Technology (Affiliated to Visvesvaraya Technological University, Karnataka), Bangalore, India ---------- ----------

(57) Abstract :
The present invention relates to integrated library management system for various public and private institutions based on internet of things sensor. The objective of the present invention is to solve the problems in the prior art technologies related to management of books in library with demand in the library with interconnecting libraries.

No. of Pages : 28 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020516 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A BLOCKCHAIN BASED SYSTEM FOR PROVIDING PAPER CHECKING ENHANCEMENTS FOR AUTHORIZATION OF A USER

(51) International classification :G06Q0040020000, G06Q0040060000, G06Q0040080000, G06Q0040000000, G06Q0020180000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Ms. K. Karpagavadivu
Address of Applicant :Assistant Professor, Computer Science and Engineering, Dr. N.G.P. Institute of Technology - Coimbatore ---------- ----------
2)Dr. Sanjay Gour
3)Ms. G Nivedhitha
4)Ms. Malathi V
5)Ms. S Padmavathi
6)Harsh Bansal
7)Surendra Singh Chauhan
8)Prof (Dr.) Vasudev Malhotra
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Ms. K. Karpagavadivu
Address of Applicant :Assistant Professor, Computer Science and Engineering, Dr. N.G.P. Institute of Technology - Coimbatore ---------- ----------
2)Dr. Sanjay Gour
Address of Applicant :Professor and Head, Computer Science and Engineering, Jaipur Engineering College and Research Centre, Jaipur 302022 ---------- ----------
3)Ms. G Nivedhitha
Address of Applicant :Assistant Professor, Computer Science and Engineering, Sri Krishna College of Technology - Coimbatore ---------- ----------
4)Ms. Malathi V
Address of Applicant :Research scholar, Electronics and Communication, Jain Deemed to be University, Karnataka ---------- ----------
5)Ms. S Padmavathi
Address of Applicant :Assistant Professor, Computer Science and Engineering, Sri Krishna College of Technology - Coimbatore ---------- ----------
6)Harsh Bansal
Address of Applicant :Assistant Professor, Computer Science and Engineering, Chandigarh University, Mohali ---------- ----------
7)Surendra Singh Chauhan
Address of Applicant :Assistant Professor, School of Computer Science and Engineering, Galgotias University, Greater Noida ---------- ----------
8)Prof (Dr.) Vasudev Malhotra
Address of Applicant :Professor and Head, Mechanical Engineering, C Bose University of science and Technology, Faridabad State Government University, Haryana ---------- ----------

(57) Abstract :
The present invention discloses a blockchain based system for providing paper checking enhancements for authorization of a user and method thereof. The system includes, but not limited to, at least one processor; at least one non-transitory computer readable storage medium storing instructions thereon, that, when executed by the at least one processor, cause the system to: concurrently displaying a plurality of visual indications depicting input mechanisms for receiving one or more input decisions and a recommended set of financial products; receiving updated values for the one or more input decisions via one or more depicted input mechanisms for a specific commodity; an output unit for determining a new recommended set of financial products and a new set of output values based upon the updated values and updating the visual indication to reflect the new set of output values; and wherein the set of output values are presenting a probability of achieving a financial goal. Accompanied Drawing [FIG. 1]

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020523 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : Energy Saving for Data Transmission in wireless Network

(51) International classification :H04W0084180000, H04L0029080000, H04L0029060000, H04W0040280000, H04L0012721000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Dr.Srimathi.J
Address of Applicant :Assistant Professor, Vivekanandha Institute of Information and Management Studies ,Elayampalayam, Tiruchengode, Tamilnadu ---------- ----------
2)Prasanta Kumar Bal
3)Prasanta Kumar Dash
4)Narayan krishan vyas
5)Dr. Pankaj Shambunath Mishra
6)Dr.Krishnakumar.N.J
7)Vishal Shridhar Wadkar
8)Dr. P. Arivazhagi
9)Dr.Lakshmi Kanthan Narayanan,
10)Dr. Vikas Tripathi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.Srimathi.J
Address of Applicant :Assistant Professor, Vivekanandha Institute of Information and Management Studies ,Elayampalayam, Tiruchengode, Tamilnadu ---------- ----------
2)Prasanta Kumar Bal
Address of Applicant :Associate Professor, GITA Autonomous College, Bhubaneswar, Orissa, India ---------- ----------
3)Prasanta Kumar Dash
Address of Applicant :Assistant Professor, Gita autonomous college, k4-1037, Kalingavihar, Bhubaneswar Khordha,odisha,751019 ---------- ----------
4)Narayan krishan vyas
Address of Applicant :Assistant Professor, Government engineering college, Jhalawar Rajasthan 326001 ---------- ----------
5)Dr. Pankaj Shambunath Mishra
Address of Applicant :Assistant Professor, 271 Kalyan kutir udhna, Surat 394210 ---------- ----------
6)Dr.Krishnakumar.N.J
Address of Applicant :Associate Professor, Department of Electronics and Communication Engineering, Gopalan College Of Engineering And Management, Bangalore ---------- ----------
7)Vishal Shridhar Wadkar
Address of Applicant :Assistant Professor, Department of Electrical Engineering, Sharad Institute of Technology, College of Engineering, Yadrav-Ichalkaranji, Maharastra ---------- ----------
8)Dr. P. Arivazhagi
Address of Applicant :Associate Professor, Dhanalakshmi shrinivasan engineering college, perambalur, Tamilnadu ---------- ----------
9)Dr.Lakshmi Kanthan Narayanan,
Address of Applicant :Assistant Professor, Saranathan College of Engineering, Venkateswara Nagar, Panjapur Trichy 620012 ---------- ----------
10)Dr. Vikas Tripathi
Address of Applicant :Associate Professor, Department of Computer Science & Engineering, Graphic Era Deemed to be University, Dehradun, Uttarakhand, India, 248002 ---------- ----------

(57) Abstract :
This study analyses the progress of, and state of the art in, energy-efficient strategies for wirelessly connecting networks of embedded computers, such as those found in wireless sensor networks (WSN), Internet of Things (IoT) and cyber-physical systems (CPS) applications. Specifically, emphasis is given to energy conservation as vital to assuring the feasibility of long lifetime, low-maintenance and more autonomous monitoring and control situations. A complete description of the link layer and routing protocols for a range of traffic patterns are discussed, and their integration and evaluation as whole protocol stacks.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020586 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SMART PILL BOX

(51) International classification :A61J0007040000, A61J0007020000, A47J0031000000, G01G0019000000, F24F0011640000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)SR University
Address of Applicant :SR University, Ananthasagar, Warangal, Telangana, India Email ID: patent@sru.edu.in Mb: 08702818333 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)NETHAJI ACHHA
Address of Applicant :HNO 27-14-146/1 laxmi Nilayam , Beside Narayana Theater, Hasanparthy, Warangal, Telangana, India, 506371 ---------- ----------
2)JANAGAMA ANU
Address of Applicant :HNO 2-10, Thotapalle, Husnabad, Siddipet, Telangana, India, 505466 ---------- ----------
3)MUNDRU SAI KUMAR
Address of Applicant :HNO 27-8-71, Valmiki Nagar, Hasanparthy, Warangal, Telangana, India, 506371 ---------- ----------
4)PULI SAI GANESH
Address of Applicant :HNO 3-6-162/2, gudibandal street no 3, Hanamkonda, Warangal, TS, India ---------- ----------
5)CH RAJRNDRA PRASAD
Address of Applicant :SR University, Ananthasagar , Warangal, Telangana ,India, 506371 ---------- ----------
6)PRAMOD KUMAR P
Address of Applicant :SR University, Ananthasagar , Warangal, Telangana ,India, 506371 ---------- ----------

(57) Abstract :
Disclosed is a smart pill box (100) comprising a body (102) with compartments (122a-122d) having a lid (124), a first sensor (106) and a second sensor (108) configured to sense signals representing a room temperature and a presence and/or an absence of a human in a vicinity of the smart pill box (100), respectively; and a servo motor (118) to rotate the lid (124); and a processing unit (120) configured to: determine and compare the room temperature with a predefined safe room temperature and generate a first signal; generate a second signal when the presence of the human is detected; and match a current time associated with a built in clock with preset slots to enable the servo motor (118) to rotate the lid (124).

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020590 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED DETECTION AND PREVENTION SYSTEM FOR DENGUE, MALARIA DISEASES IN INDIA USING MACHINE LEARNING AND DATA MINING FOR HEALTHCARE SYSTEM IMPROVISATION

(51) International classification :G06N0020000000, G16H0050700000, A61K0036484000, G06N0005000000, G06F0016340000
(86) International Application No :PCT// Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA Filing Date :NA
(62) Divisional to Application Number :NA Filing Date :NA

(71)**Name of Applicant :**
1)Mrs. Deeba Khan
Address of Applicant :Research Scholar, Computer Science and Engineering Ramaiah Institute of Technology, Bengaluru ---------- ----------
2)Shakir Khan
3)Rashmi Rani Patro
4)Dr. Sheshang Degadwala
5)Dr. Renu Vij
6)Nobendu Mukerjee
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Mrs. Deeba Khan
Address of Applicant :Research Scholar, Computer Science and Engineering Ramaiah Institute of Technology, Bengaluru ---------- ----------
2)Shakir Khan
Address of Applicant :Associate Professor, College of Computer and Information Sciences, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia ---------- ----------
3)Rashmi Rani Patro
Address of Applicant :Research Scholar, Department of Computer Science, Shikha 'O' Anusandhan, Deemed to be University, Bhubaneshwar, Khurda, 751019, India ---------- ----------
4)Dr. Sheshang Degadwala
Address of Applicant :Associate Professor, Sigma Institute of Engineering, Engineering Block, Sigma Group of Institutes, Ajwa-Nimeta Road, Bakrol, Vadodara, Gujarat- 390019, India ---------- ----------
5)Dr. Renu Vij
Address of Applicant :Associate Professor, College of Business Studies, Vidya Jyoti Institute of Higher Education, Derabassi, Chandigarh ---------- ----------
6)Nobendu Mukerjee
Address of Applicant :Department of Microbiology, Ramakrishna Mission Vivekananda Centenary College, West Bengal, Kolkata-700118, India ---------- ----------

(57) Abstract :
The present invention relatesartificial intelligence based detection and prevention system for dengue, malaria diseases in India using machine learning and data mining for healthcare system improvisation.A serious illness will cost a great deal of money andtime. Dengue, malaria diseases has posed a threat to the world'smost vulnerable population. Each year, around 70 million people areharmed globally. The female mosquito which are well-adapted to dwell near humans, maytransmit this disease. Mosquitoes have the potential to spread dengue, malaria diseases. Health organisations frequently utilise data processing to classifyand forecast disease. Dengue, malaria diseases must be accurately predictedimmediately, and sophisticated algorithms can aid in this endeavour.

No. of Pages : 13 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020591 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEEP LEARNING ENABLED SYSTEM AND METHOD FOR DETERMINING USERS CONFIDENCE BY ANALYSING EXPRESSION, BEHAVIOUR AND VOICE

(51) International classification :G06N0020000000, G06N0007000000, G06F0003010000, H04L0029080000, G01N0033000000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)D. Tarangini
Address of Applicant :Assistant Professor, Civil Engineering Department, Mahatma Gandhi Institute of Technology, Gandipet, Hyderabad ---------- ----------
2)Dr. Ihtiram Raza Khan
3)Swati Atri
4)Prof. Dr. Eng. Harish
5)Dr. Sheshang Degadwala
6)Mr. Sourav Mohanto
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)D. Tarangini
Address of Applicant :Assistant Professor, Civil Engineering Department, Mahatma Gandhi Institute of Technology, Gandipet, Hyderabad ---------- ----------
2)Dr. Ihtiram Raza Khan
Address of Applicant :Academician, Jamia Hamdard, Delhi ---------- ----------
3)Swati Atri
Address of Applicant :Assistant Professor, Computer Science, Arya Kanya Mahavidyalya Shahabad Markanda, Kurukshetra ---------- ----------
4)Prof. Dr. Eng. Harish
Address of Applicant :B. E (C.Sc), M.Tech. (C.Sc), PhD (IIT,C.Sc), PDF(INRIA, France) Sanjaynagar, Bangalore-560094 ---------- ----------
5)Dr. Sheshang Degadwala
Address of Applicant :Associate Professor, Sigma Institute of Engineering, Engineering Block, Sigma Group of Institutes, Ajwa-Nimeta Road, Bakrol, Vadodara, Gujarat 390019, India ---------- ----------
6)Mr. Sourav Mohanto
Address of Applicant :Assistant Professor, Pharmaceutics, Yenepoya Pharmacy College and Research Centre, Mangalore ---------- ----------

(57) Abstract :
The present invention relatesdeep learning enabled system and method for determining users' confidence by analysing expression, behaviour and voice.The system comprises various units like as capturing unit, detecting unit, collecting unit, processing unit etc.Machine learning algorithms used by developers to predict the users' choices and offer relevant suggestions to users. Co-relating and predicting data and information to finding out confidence of user through assessment of expression, voice, image.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020603 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A DC-DC CONVERSION CIRCUIT AND VEHICLE-MOUNTED CHARGER SUITABLE FOR WIDE INPUT VOLTAGE

(51) International classification	:H02M0003335000, H05B0041282000, H02M0003280000, H05B0041392000, H02M0001000000
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. D Obulesh
Address of Applicant :Professor, Department of Electrical & Electronics Engineering, C V R College of Engineering, Hyderabad - 501510 ---------- ----------
2)Dr. Ashoka H N
3)Dr. Ashok Kusagur
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. D Obulesh
Address of Applicant :Professor, Department of Electrical & Electronics Engineering, C V R College of Engineering, Hyderabad - 501510 ---------- ----------
2)Dr. Ashoka H N
Address of Applicant :Professor, Department of Electrical & Electronics Engineering, University B D T College of Engineering, Hadadi Road, Davangere -577004 ---------- ----------
-
3)Dr. Ashok Kusagur
Address of Applicant :Associate Professor, Department of Electrical & Electronics Engineering, University B D T College of Engineering, Hadadi Road, Davangere -577004 ---------- ----------
-

(57) Abstract :
The present invention discloses a DC-DC conversion circuit and vehicle-mounted charger suitable for wide input voltage. The system includes, but not limited to, a series resonant inverter circuit connected with a plurality of frequency isolation transformers, a rectifier circuit and a controller unit. Further, the first and second series is creating the input end of the resonant inverter circuit is connected to the DC source, and the at least one output end of the one or more series resonant inverter circuits, which is respectively connected to the two ends of the primary sides of the plurality of high frequency isolation transformers, after the secondary sides of the plurality of high-frequency isolating transformers, which is connected in series and connected to the rectifier circuit, the controller unit inputs control signals to the series resonant inverter circuits. Accompanied Drawing [FIG. 1]

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2022

(21) Application No.202241020616 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR PRIVACY-PRESERVING MEDICAL RECORD SEARCHING ENGINE FOR AN ARTIFICIALLY INTELLIGENT BASED DIAGNOSIS IN IOT HEALTHCARE

(51) International classification :G16H0010600000, A61B0005000000, G16H0050200000, G06N0020000000, G06N0005020000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr.B.Sridhar
Address of Applicant :Professor, Department of ECE, Lendi Institute of Engineering and Technology, Vizianagaram, Andhra Pradesh, India. Pin Code:535005 ---------- ----------
2)Dr.Kazi Kutubuddin Sayyad Liyakat
3)Mr.Dipak Pandit Chavan
4)Mr.Meriga Kiran Kumar
5)Mr.Pilla Mohan Ganesh
6)Mr.Jay Prakash Narayan Verma
7)Dr.Gummadi Jose Moses
8)Mr.Y.Laxman Rao
9)Mrs.P.Neelima
10)Dr. Syed Azahad
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.B.Sridhar
Address of Applicant :Professor, Department of ECE, Lendi Institute of Engineering and Technology, Vizianagaram, Andhra Pradesh, India. Pin Code:535005 ---------- ----------
2)Dr.Kazi Kutubuddin Sayyad Liyakat
Address of Applicant :At-khed, Post-Kegaon, Tal-North Solapur, Solapur District, Maharashtra, India. Pin Code:413255 ---------- ----------
3)Mr.Dipak Pandit Chavan
Address of Applicant :Assistant Professor in Deogiri College, Research Student, Department of Computer Science & IT, Dr.Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India. Pin Code:431004, ---------- ----------
4)Mr.Meriga Kiran Kumar
Address of Applicant :Assistant professor, Department of Information Technology, Aditya College of Engineering and Technology, Surampalem, Kakinada, Andhra Pradesh, India. Pin Code:533437 ---------- ----------
5)Mr.Pilla Mohan Ganesh
Address of Applicant :Assistant Professor, Department of Information Technology, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh, India. Pin Code:530026 ---------- ----------
6)Mr.Jay Prakash Narayan Verma
Address of Applicant :Assistant Professor, Department of ECE, SRM IST, Modinagar Ghaziabad, Uttar Pradesh, India. Pin Code:201204 ---------- ----------
7)Dr.Gummadi Jose Moses
Address of Applicant :Professor & HOD, Department of CSE (Cyber Security), Malla Reddy Engineering College (A), Hyderabad, Telangana, India. Pin Code:500100 ---------- ----------
8)Mr.Y.Laxman Rao
Address of Applicant :Assistant Professor, Department of Information Technology, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh, India. Pin Code:530026 ---------- ----------
9)Mrs.P.Neelima
Address of Applicant :Assistant Professor, Department of CSE, School of Engineering and Technology, Sri Padmavathi Mahila Visvavidyalayam, Tirupati, Andhra Pradesh, India. Pin Code:517502 ---------- ----------
10)Dr. Syed Azahad
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Methodist College of Engineering and Technology, Hyderabad, Telangana, India. Pin Code:500060 ---------- ----------

(57) Abstract :
The present invention discloses a system for privacy-preserving medical record searching engine for an artificially intelligent based diagnosis in IoT healthcare and method thereof. The system includes, but not limited to, at least one processor; at least one non-transitory computer readable storage medium storing instructions thereon, that, when executed by the at least one processor, cause the system to: a local host having an artificial intelligence security interface who owns a disease case-database, in which medical record searching engine is a data provider who possesses disease case-database containing a set of confirmed cases solutions and corresponding body parameters, and the patient is a client who needs to invoke useful confirmed case solutions associated with the body parameters from the artificial intelligence security interface for protecting the security of the patient and the artificial intelligence security interface, the proposed system needs to achieve bilateral security. Accompanied Drawing [FIG. 1]

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/03/2021
(21) Application No.202131011929 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SEMI-AUTOMATIC WORKFLOW FOR METADATA CURATION FOR DIGITAL LIBRARY.

(51) International classification :A61C0013000000, A61C0007000000, A61C0013340000, H04N0005760000, H04N0021840000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
Address of Applicant :Sponsored Research & Industrial consultancy, Indian Institute of Technology Kharagpur; West Bengal, India-721302
(72)**Name of Inventor :**
1)Dr. Plaban Kumar Bhowmick
2)Dr. Partha Pratim Chakrabarti
3)Dr. Partha Pratim Das
4)Mr. Subhayan Roy
5)Mr. Nanda Gopal Chattopadhyay

(57) Abstract :
A semi-automatic method for end-to-end metadata curation comprising involving a set of automated processes and in combination with a set of manual processes for transforming source metadata descriptions into standardized and enhanced descriptions according to a target metadata standard for large scale integration of resources that are published and maintained in a distributed manner where the individual publisher is free to choose different modes of data publication including structured, semi-structured and unstructured format and metadata representation schema either standard or non-standard. The combination of the set of automated processes and the set of manual processes depends on a tool guided data exploration process which helps in finding out recurring patterns concerning different metadata values.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2021

(21) Application No.202131056231 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM FOR SIMULTANEOUS WIRELESS INFORMATION AND ENERGY TRANSFER IN A HETEROGENEOUS NETWORK AND METHOD THEREOF .

(51) International classification	:H04L0025020000, H04L0005000000, H02J0050200000, H04L0001000000, H04W0088080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
Address of Applicant :Indian Institute of Technology Guwahati, Guwahati Assam India 781039.
(72)**Name of Inventor :**
1)ARIJIT ROY
2)SALIL KASHYAP
3)RATNAJIT BHATTACHARJEE

(57) Abstract :
The present invention discloses a communication system for simultaneous transfer of energy and information in a SWIET network comprising of a base station (BS) with multiple antennas to transmit energy and information signals simultaneously wirelessly to energy users (EUs) with energy harvesting capabilities and information users (IUs) with information decoding capabilities, a controller in said BS to estimate wireless channels through transmission of uplink pilot signals from each of the EUs and IUs in each coherence time interval during which associated wireless channel coefficients for the EUs and IUs remain unchanged. The controller enables the antennas to transmit energy and information signals simultaneously for the EUs and the IUs in a phased manner in said coherence time intervals and thereby enabling the IUs to cancel the interference due to signals intended for EUs at its end.

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/03/2022
(21) Application No.202231011178 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD TO DETECT PLANT DISEASE INFECTION

(51) International classification	:G06T0007000000, G06T0005000000, G06K0009460000, G06K0009620000, G06K0009000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BLU COCOON DIGITAL PRIVATE LIMITED
Address of Applicant :ASO 306, South Wing, Astra Towers, 2C/1 Action Area II C, Rajarhat, Newtown Kolkata, North 24 Parganas, West Bengal – 700115 India.
(72)**Name of Inventor :**
1)Sukhendu Sarkar
2)Pinaki Bhattacharyya
3)Souvik Debnath

(57) Abstract :
A system (100) to detect plant disease infection is disclosed. The plurality of subsystems includes an image receiving subsystem (112), configured to receive one or more images of plants as captured via image capturing devices. The plurality of subsystems includes an image contrast improving subsystem (114), configured to process the received one or more images of the plants using artificial intelligence-based image enhancing technique. The plurality of subsystems includes an image evaluation subsystem (116), configured to segregate the processed one or more images and evaluate the segregated one or more images to remove for image noise and unwanted objects. The plurality of subsystems includes a feature extraction subsystem (118), configured to extract one or more features from the evaluated one or more images. The plurality of subsystems includes an infection detection subsystem (120), configured to detect infected region and non-infected region based on the extracted one or more features.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/03/2022

(21) Application No.202231011560 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADVANCED METHOD AND PROCESS QUICK ELECTRIC VEHICLE CHARGING.

(51) International classification	:B60L0053600000, B60L0053300000, B60L0053630000, B60L0053100000, B60L0053140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Professor Nalin Behari Dev Choudhury
Address of Applicant :Electrical Engineering Department, National Institute of Technology Silchar Assam 788010.
2)Dr. Bhupendra Kumar Assistant Professor
3)Anush Prabhakaran
4)K Himaja
5)G. Srinivas
6)Dr. B. K. Sarkar
(72)**Name of Inventor :**
1)Professor Nalin Behari Dev Choudhury
2)Dr. Bhupendra Kumar Assistant Professor
3)Anush Prabhakaran
4)K Himaja
5)G. Srinivas
6)Dr. B. K. Sarkar

(57) Abstract :
Our Invention “Advanced Method and Process Quick Electric Vehicle Charging” is an Electric Vehicles (EVs) are quickly turning into the heralds of vehicle innovation. First electric vehicles were disregarded in view of not having sufficient battery limit and in light of low effectiveness of their electric engines. Creating semiconductor and battery advances expanded the interest in the EVs. All things considered, current batteries actually have inadequate limit. Thus, vehicles should be re-energized at brief distances (around 150 km). Because of planned flight and appearance times EVs give off an impression of being more reasonable for city transports rather than customary autos. Because of right charging innovation and the accessibility of sustainable power for electric transports, the urban communities have less commotion and CO2 emanations. The energy utilization of gas powered motors is higher than of the electric engines. In this paper, studies on the business electric vehicle charging strategies will be checked on and the module charging cycles will be depicted exhaustively. This study endeavors to address the inquiries of how module charging process correspondence has performed between the EV and Electric Vehicle Supply Equipment (EVSE). Toward the start of the charging system, EVSE checks the disengagement of the great voltage framework and it continues announcing this worth during the entire charging time. The electric power is gotten from the network by the rectifier and it is conveyed to the DC/DC converter. The DC high voltage can be created by 3-stage AC. The DC power is associated with a channel in the wake of being changed over by 3-stage rectifiers; the result of the channel is associated with a DC/DC converter lastly went through one more channel to the vehicle battery.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/03/2022

(21) Application No.202231012165 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED TECHNIQUES TO SEGMENT THE IMAGES CAPTURED USING MULTIPLE MODALITIES FOR DEEPER ANALYSIS OF STAGES OF LUNG CANCER

(51) International classification :G01N0033000000, G06K0009620000, G06N0003040000, G06N0005020000, G01R0033560000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)MR. DIPAK NATH
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS, SAO CHANG COLLEGE, TUENSANG, NAGALAND, 798612.
2)MR. BASTIN ROGERS C
3)K.GAYATHRI DEVI
4)DR T. JOBY TITUS
5)DR B RAJESH KUMAR
6)DIPAN KUMAR DAS
7)DR SANJUKTA BANERJEE
8)DR.K.S.THIVYA
9)DR. S. SARAVANAN
10)DR. VAIBHAV PANDURANG SONAJE
11)DR SONU MISHRA
12)DR VIRENDRA GOMASE
(72)**Name of Inventor :**
1)MR. DIPAK NATH
2)MR. BASTIN ROGERS C
3)K.GAYATHRI DEVI
4)DR T. JOBY TITUS
5)DR B RAJESH KUMAR
6)DIPAN KUMAR DAS
7)DR SANJUKTA BANERJEE
8)DR.K.S.THIVYA
9)DR. S. SARAVANAN
10)DR. VAIBHAV PANDURANG SONAJE
11)DR SONU MISHRA
12)DR VIRENDRA GOMASE

(57) Abstract :
Artificial intelligence based techniques to segment the images captured using multiple modalities for deeper analysis of stages of lung cancer the proposed invention. The proposed invention aims at analysing the exact stage of cancer so that the concept of therapeutic treatment can be accomplished. The invention implements artificial intelligence to the images for automated detection and suggestions to health care professionals.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2022

(21) Application No.202231012657 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BIOMETRIC AUTHENTICATION ON FORENSIC MEDICINE AND LEGAL PROCESS

(51) International classification	:G06K0009000000, G06F0021320000, G06Q0050180000, G06Q0050260000, A61B0005117100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Ankur Bhargava
Address of Applicant :Professor and Head of Department, Department of Oral and Maxillofacial Pathology and Oral Microbiology, Hazaribag College of Dental Sciences & Hospital, Hazaribag- 825301.
2)Dr. Uddipan Kumar
3)Dr. Jiji George, MDS
4)Dr. Shakeb Khan Afridi
(72)**Name of Inventor :**
1)Dr. Ankur Bhargava
2)Dr. Uddipan Kumar
3)Dr. Jiji George, MDS
4)Dr. Shakeb Khan Afridi

(57) Abstract :
Our Invention “Biometric Authentication on Forensic Medicine and Legal Process” is a Biometrics has generally tracked down its normal mate in Forensics. The main applications found in the writing and over referred to so often, are connected with biometric estimations for the distinguishing proof of numerous wrongdoers from a portion of their biometric and anthropometric qualities (ten print cards) and individualization of guilty party from follows found on crime scenes (for example fingermarks, reserves, indentations, DNA). From Sir Francis Galton, to the presentation of AFIS frameworks in the logical labs of police offices, Biometrics and Forensics have been "dating" with substitute outcomes and results. As an issue of realities there are numerous advances created under the "Biometrics umbrella" which might be streamlined to more readily affect a few Forensic situations and criminal examinations. Simultaneously, there is a practically interminable rundown of open issues and cycles in Forensics which might profit from the presentation of custom fitted Biometric advances. Joining the two disciplines, on an appropriate logical ground, may just bring about the accomplishment for the two fields, as well as a substantial advantage for the general public. Various Forensic cycles might include Biometric-related advancements, among them Evidence assessment, Forensic examination, Forensic Intelligence, Surveillance, Forensic ID the board and Verification.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/03/2022

(21) Application No.202231012799 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SYSTEM FOR OBFUSCATION OF QUERIES AND RESPONSES IN A SECURITY DATA SEARCH SYSTEM

(51) International classification	:G06F0021620000, G06F0016245500, G06F0016140000, G06F0016903800, G06F0021570000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Sayan Nath
Address of Applicant :Assistant Professor, Department of CSE, Brainware University, Kolkata.
2)Abhishek Tiwari
3)ANAND RANJAN
4)ATUL VERMA
5)Dr. Ranjan Kumar
6)Jayswal Hardikkumar Sudhirbhai
7)Dr. S. Saravanan
(72)**Name of Inventor :**
1)Sayan Nath
2)Abhishek Tiwari
3)ANAND RANJAN
4)ATUL VERMA
5)Dr. Ranjan Kumar
6)Jayswal Hardikkumar Sudhirbhai
7)Dr. S. Saravanan

(57) Abstract :
The present invention discloses a system for obfuscation of queries and responses in a security data search system. The system includes, but not limited to, at least one processing unit; a non-transitory computer-readable media storing instructions which, when executed by the one or more processors, cause: generating a plurality of bloom filters, wherein each bloom filter corresponds to a particular subset of a set of compromised credentials for providing an improvement in computer security by partial obfuscation of data records in result sets resulting from search queries.

No. of Pages : 19 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022

(21) Application No.202231012957 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR CLUSTER OPTIMIZATION FOR CRIME ANALYSIS

(51) International classification	:H04N0007180000, G06K0009000000, G06Q0050260000, G06F0016350000, G06K0009200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DILEEP KUMAR KADALI
Address of Applicant :Research Scholar, Department of Computer Science and Engineering, School of Engineering and Technology, GIET University, Gunpur, Rayagad District, Odisha-765055.
2)R.N.V. Jagan Mohan
3)M. Chandra Naik
(72)**Name of Inventor :**
1)DILEEP KUMAR KADALI
2)R.N.V. Jagan Mohan
3)M. Chandra Naik

(57) Abstract :
Discloses a cluster optimization system (100) for crime analysis. The system a classification module (102), configured to classify a two-dimensional crime investigation data set into a plurality of categories, the two-dimensional crime investigation data set is processed by a prisoner dilemma technique to create neutrosophic clusters using a cluster optimization module (104) when a first category is classified, the two-dimensional crime investigation data set is processed by the prisoner dilemma technique to monitor a crime and a plurality of criminals with physical location using security camera (106) live videos based on the time factors frames to find fuzzy rough logic when a second category is classified. An analyzation module 108 may be configured to perform vulnerability analysis to identify locations more prone to criminal activities in the future.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022

(21) Application No.202231012984 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SHANK FOOT ORTHOSIS SYSTEM USING SECOND-ORDER SLIDING MODE CONTROLLER

(51) International classification :A61F0005010000, A61B0005047800, A61B0005048400, G01P0013000000, G08G0001005000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Rupam Gupta Roy
Address of Applicant :Assistant Professor, Electronics and Instrumentation Engineering Department, National Institute of Technology, Agartala.
2)Dr. Girish V. Lakhekar
3)Anurupa Gupta Roy Lodh
4)Rajakumar B. R
5)Binu Dennis
(72)**Name of Inventor :**
1)Dr. Rupam Gupta Roy
2)Dr. Girish V. Lakhekar
3)Anurupa Gupta Roy Lodh
4)Rajakumar B. R
5)Binu Dennis

(57) Abstract :
The main design of our invention discloses the shank foot orthosis system using a second-order sliding mode controller, which comprises a second-order Sliding Mode Control (SMC). The main purpose of the present invention is to support the movement of the knee joint for handicap. Generally, handicapped people can't move their legs to their desired target place. So for this purpose, the shank foot orthosis system is designed, which is linked with brain signal so that can be controlled by adaptive Second-order Sliding Mode Control. Initially, the EEG recorder captures the activities of the brain signal and passes them to the AI module. Then physical estimation estimates the physical movement and then calculates the targeted position. Error estimation is used to estimate the errors of the targeted and original positions. Finally, the foot orthosis system is controlled by a second-order Sliding Mode controller.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022
(21) Application No.202231013133 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A POINT CLOUD GENERATION SYSTEM OF AN OBJECT FROM MULTIPLE VIEWS

(51) International classification	:G06K0009000000, G06T0007110000, G06F0016583000, G06T0007521000, G06T0017000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Kishore Kumar Senapati
Address of Applicant :Birla Institute of Technology, MESRA, Ranchi, Jharkhand, India-835215.
(72)**Name of Inventor :**
1)Radhamadhab Dalai
2)Kishore Kumar Senapati

(57) Abstract :
A system for generating Point cloud generation of an Object, comprises of: an image retrieval module for retrieving views of the object in form of an image from a plurality of angles; a segmentation module for finding region of interest from the image based on a Voxel based approach; an encoder-decoder module for generating the point cloud in three-dimensional space upon merging pixel clouds; an optimization module comprises of a down-sampling stage to capture a context of the input image for segmentation, and merges the pixel clouds in a three-dimensional space gathered from multiple views; and a generative reconstruction module for generating atleast a processed secondary image to analyze similarity between the retrieved views of the image and analyzed for reconstructing the point cloud.

No. of Pages : 28 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/03/2022

(21) Application No.202231013181 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : STRATEGIC PLANNING MODEL TO INCREASE THE PROFITABILITY OF A HUMAN RESOURCES OUTSOURCING SME THROUGH THE USE OF DIGITAL TRANSFORMATION

(51) International classification	:H03G0003000000, C12N0009060000, G06Q0030020000, C12N0005078900, B65D0041040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. Smruti Rekha Sahoo
Address of Applicant :Assistant Professor, Samanta Chandra Sekhar, (Autonomous) College, Puri- 752001, Odisha, India.
2)Dr.Sweta Leena Hota
3)Dr.S.Ayyappan
4)Mr.M.Sakthivadivel
5)Ms. V Ambika
6)Dr. S. Balamurugan
7)Dr. Maitri
8)Dr. S. Saravanan
(72)**Name of Inventor :**
1)Dr. Smruti Rekha Sahoo
2)Dr.Sweta Leena Hota
3)Dr.S.Ayyappan
4)Mr.M.Sakthivadivel
5)Ms. V Ambika
6)Dr. S. Balamurugan
7)Dr. Maitri
8)Dr. S. Saravanan

(57) Abstract :
Outsourcing SMEs in India compete with large companies in the market. And despite offering the same services with better conditions to the same clients, they have a much lower sales volume than the large ones. In relation to this problem, the effectiveness of the use of Digital Transformation in strategic planning for companies with these characteristics was validated through research. The model used three strategies based on Digital Transformation namely support strategy, sales strategy and resale strategy. Likewise, it is important to correctly implement the tools of the model, since only in this way will it be possible to align the three pillars of digital transformation and achieve a successful digital transformation. This alignment allows SMEs to streamline and reduce the time of their processes, be constantly updated and seek success in the short term without losing sight of the strategy.

No. of Pages : 29 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/03/2022

(21) Application No.202231013203 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR SEED QUALITY RAPID ASSESSMENT

(51) International classification	:G01N0021850000, A01C0001020000, G06K0009000000, A01C0007100000, G06N0005020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Blu Cocoon Digital Private Limited
Address of Applicant :ASO 306, South Wing, Astra Towers, 2C/1 Action Area II C, Rajarhat, Newtown Kolkata, North 24 Parganas, West Bengal – 700115, India.
(72)**Name of Inventor :**
1)Pinaki Bhattacharyya
2)Souvik Debnath

(57) Abstract :
A system and method for seed quality rapid assessment is disclosed. Embodiments of the present disclosure comprises an Artificial Intelligence (AI) based computing system 104 for determining quality of seeds. Plurality of modules 106 comprises an image receiver module 208, an operation performing module 210, a value determination module 212, a feature determination module 214, a region detection module 216, a data management module 218 and a data output module 220. The data output module 220 configured to output the predicted germination pattern, the detected mixture of different types of seeds, the detected percentage of the one or more impurities and the detected set of deformed seeds on user interface screen of one or more electronic devices 102. A chemical determination module 222 is configured to detect one or more behavioral changes in the plurality of seeds using the image processing based AI model.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/03/2022

(21) Application No.202231013211 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NOVEL FACE DETECTION TECHNIQUES FOR SECURITY SURVEILLANCE UNDER OCCLUDED FACE IMAGES

(51) International classification	:G06N0003040000, G06K0009620000, G06N0003080000, G06N0003000000, G06F0021560000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Munesh Chandra Trivedi
Address of Applicant :Dept of CSE NIT Agartala Tripura India 799046.
2)Nandita Goyal
3)Vikash Somani
4)Soumya Trivedi
5)Mrinal Knati Debbarma
6)Anupam Jamatia
(72)**Name of Inventor :**
1)Munesh Chandra Trivedi
2)Nandita Goyal
3)Vikash Somani
4)Soumya Trivedi
5)Mrinal Knati Debbarma
6)Anupam Jamatia

(57) Abstract :
The present approach detects malicious behavior of hosts in cloud environment by applying feature selection and then classification. For selection of optimal features,we are using metaheuristic algorithm Firefly and then using convolutional neural network (CNN) for classification of malicious hosts. The central concept behind this new approach is the application of parameter optimization in neural network as usage of the greater number of parameters restrict the performance; hence we apply feature selection process. The accuracy of this new approach making use of Firefly algorithm for feature selection along with Convolutional Neural Network for classification is greater than 99%; it is high as compared to other methods like Particle swarm Optimization and Shuffled Frog Leaping algorithm for feature selection followed by CNN for classification respectively.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/03/2022

(21) Application No.202231013643 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR EDITING MATHEMATICAL FORMULA AND METHOD THEREOF

(51) International classification	:G06F0040180000, G06F0040111000, G06F0008340000, G06F0040100000, G06F0017100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. C. Siva Sankar
Address of Applicant :Associate Professor, Department of Education, Rajiv Gandhi University, Rono hills, Doimukh, Arunachal Pradesh, India, Pincode: 791112.
2)Dr. B. Senthilnathan
3)Mr. Nellore Manoj Kumar
4)Dr. Konduru Venkateswara Raju
5)Dr. Pratibha Vijay Jadhav
6)Dr. K. Kavita
7)Mrs. T. Pushpalatha
8)Mrs. Preeti Gupta
(72)**Name of Inventor :**
1)Dr. C. Siva Sankar
2)Dr. B. Senthilnathan
3)Mr. Nellore Manoj Kumar
4)Dr. Konduru Venkateswara Raju
5)Dr. Pratibha Vijay Jadhav
6)Dr. K. Kavita
7)Mrs. T. Pushpalatha
8)Mrs. Preeti Gupta

(57) Abstract :
Calculations may be lengthy and complicated, resulting in LATEX math strings that are similarly lengthy and complex to communicate the results of the calculations. Visual editing of the typeset LATEX formulae is accomplished via operations. Operations are triggered by control points in the formula, which is defined as a mechanism to indicate an operation associated with a point's position relative to a symbol in the formula. Control points are used to express operations related to a point's location relative to a symbol in the formula. When formulae reach the control points, they may be expanded in various ways: LATEX can be entered locally by typing, an existing formula can be inserted, or a portion of the formula itself can be shifted to that point for example. The subtree for a selection may be changed, erased, relocated to another position in the formula, or lifted out of the formula and put in a floating chip above the canvas by clicking on a symbol or dragging a rectangle over a region in the formula. Formula chips, which may be used as parameters to operations, can be found in a symbol palette and include a collection of pre-existing formulae. A control point operation may be accomplished by selecting, picking an argument, and then specifying the argument, or dragging an argument to a control point in the formula. To determine if visual editing procedures can be utilized to minimize the time and actions required to make adjustments to formulae, we conduct an online experiment in which we analyze the effectiveness of various visual editing operations.

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/03/2022

(21) Application No.202231013760 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LABORATORY SCALE AUTOMATED BIOGAS PRODUCTION AND TESTING SYSTEM

(51) International classification	:C12M0001107000, C12M0001000000, B01F0013100000, C12M0001020000, B01F0007000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HARIS JAMAL
Address of Applicant :Lichubari (Near H.H.M.I.), Village: 1 No Chowdung Goan P.O. Cinnamara, Dist: Jorhat, Assam, PIN: 785008.
2)SARIFUL HUSSAIN
3)PG RAMESH
(72)**Name of Inventor :**
1)HARIS JAMAL
2)SARIFUL HUSSAIN
3)PG RAMESH

(57) Abstract :
The present invention relates to a system for laboratory scale biogas production, which facilitates testing of reliability and feasibility of a biogas plant before commissioning it in the field. Although it is a laboratory equipment, its configuration, size and scale are closer to an industrial or field version, so that errors or approximations in scaling up the experimental results are minimised. The system comprises two interconnected experimental digestors having airtight biomass slurry containers (102) covered with hot water filling outer jackets (104); a hot water tank (200) connected to the outer jackets (104) for recirculating the hot water therebetween using water pumps (202); a motorized agitator (106) adapted to mix the slurry fed into the slurry containers (102); a biogas storage container (300) connected to the slurry containers (102); and a monitoring device (400) including one or more sensors (402) to read, record, analyse and display one or more parameters associated with the biogas production in between the experimental digesters (100) and a reference digestor (400). The outer jackets (104) have a vertical split portion (104a) for ease for manufacturing and installation of external parts/components (110) thereon.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/03/2022

(21) Application No.202231013934 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FLOW NET MODEL TO PREDICT FLOW LINES, EQUIPOTENTIAL LINES, SEEPAGE PRESSURE AND DISCHARGE

(51) International classification	:G06T0011200000, G01R0033383000, G01V0001380000, A61B0005044000, G06F0030230000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. T. SENTHIL VADIVEL
Address of Applicant :Professor & Head, Department of Civil Engineering, Adamas University, Barasat - Barrackpore Road, 24 Parganas North, Jagannathpur, Kolkata, West Bengal - 700126, India.
2)SUBHANKAR SANTRA
3)SAYANTA SIKDAR
4)BAHNISIKHA DAS
5)TRIDIB PRAMANIK
(72)**Name of Inventor :**
1)Dr. T. SENTHIL VADIVEL
2)SUBHANKAR SANTRA
3)SAYANTA SIKDAR
4)BAHNISIKHA DAS
5)TRIDIB PRAMANIK

(57) Abstract :
In case of Hydraulic structures, understanding the seepage phenomenon of water through soil is essential and it impacts on the design and maintenance of such structures. The physical existence of flow net, i.e., network formed by flow lines and equipotential lines under the hydraulic structures can be assumed by engineering personnel only through solving Laplace Equation using simple boundary conditions at entry and exit. However, in practical field such simple boundary conditions do not exist; and the boundary conditions available in the actual hydraulic structures do not satisfy the Laplace equation. Nowadays many computers simulated models are available but the output does not give the actual insight into the practical problem. In graphical method of seepage analysis, the first step is to plot the flow lines and then the equipotential lines are drawn perpendicular to the already plotted flow lines. However, there is no well-structured model available to address the practical site condition for visualizing the actual flow net. In order to have a clear visual representation of flow lines and equipotential lines, a small model is devised with variable boundary conditions from which we can get exact flow path which will facilitate to draw the flow lines and equipotential lines.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/03/2022

(21) Application No.202231013973 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COVID-19 DETECTION MODEL ON CHEST X-RAYS AIDING AN END-TO-END DEEP CNN

(51) International classification	:G06Q0050220000, G16H0040200000, G06N0020100000, G06F0119180000, G01N0033320000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Ms. SUBHASHREE SUBHASMITA PRADHAN
Address of Applicant :B.Tech (ELECTRICAL ENGINEERING), INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG, DHENKANAL, ODISHA 759146.
2)Mr. SUBHAM SENAPATI
3)Ms. SMRUTIPRAGYAN PADHI
4)Mr. ANWESH PADHI
5)Mrs. SUNITA PAHADASINGH
6)Mr. BIBHU PRASAD GANTHIA
(72)**Name of Inventor :**
1)Ms. SUBHASHREE SUBHASMITA PRADHAN
2)Mr. SUBHAM SENAPATI
3)Ms. SMRUTIPRAGYAN PADHI
4)Mr. ANWESH PADHI
5)Mrs. SUNITA PAHADASINGH
6)Mr. BIBHU PRASAD GANTHIA

(57) Abstract :
The COVID-19 is spreading all over the planet. Clinical imaging modalities for example, radiography assume a significant part in the battle against COVID-19. Profound learning (DL) methods have had the option to further develop clinical imaging instruments and assist radiologists with making clinical choices for the determination, checking and anticipation of various sicknesses. PC Aided Diagnostic (CAD) frameworks can further develop work proficiency by exactly portraying diseases in chest X-beam (CXR) pictures, accordingly working with resulting measurement. Computer aided design can likewise assist with computerizing the checking process and reshape the work process with negligible patient contact, giving the best assurance to imaging experts. The target of this study is to foster a profound learning calculation to distinguish Coronavirus, pneumonia and ordinary cases on CXR pictures. We propose two orders issues, (I) a double order to arrange COVID-19 and typical cases and (ii) a multiclass characterization for COVID-19, pneumonia and typical. Nine datasets and in excess of 3200 COVID-19 CXR pictures are utilized to evaluate the proficiency of the proposed procedure. The model is prepared on a subset of the public dataset utilizing wash actuation, hence working on the preparation exactness to identify COVID-19 and other pneumonia. The models were tried on eight combined datasets moreover on individual test sets to affirm the level of speculation of the proposed calculations

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/03/2022

(21) Application No.202231014012 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND ELECTRONIC DEVICE FOR TRACKING TRAVELLER OF COUNTRY TO ENHANCE SECURITY AND SAFETY

(51) International classification	:G06Q0050260000, G06K0009000000, D01H0007600000, G06Q0020340000, H04M0003510000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Visito Ventures India Pvt Ltd
Address of Applicant :4, Sukhlal Johury Lane, Kolkata
(72)**Name of Inventor :**
1)Swananda Laha
2)Sanjay Chomal

(57) Abstract :
A method (200) and an electronic device (100) for tracking a traveller of a country to enhance security and safety of the country are disclosed. The method (200) includes extracting, by an electronic device (100), the traveller's online information from at least one of: a bureau of immigration, a social security server, and one or more financial transaction performed by the traveller. The method includes extracting an accommodation information, a basic travel detail / travel to next destination information, and a current location of the traveller. The method storing the accommodation information and the basic travel detail or travel to next destination information, and the current location in a centralized server or locally on the electronic device if there is no active internet. The method includes reporting the traveller's information comprising traveller's image and biometrics for authentication, the accommodation information, the basic travel detail or travel to next destination information, and current location to a local law enforcement office.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/03/2022

(21) Application No.202231014044 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED RESERVATION, REGISTRATION AND CHECK-OUT PROCEDURE IN HOTEL INDUSTRY

(51) International classification :G06Q0010020000, G06Q0050120000, G06Q0020400000, G06K0009000000, G01C0021360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Viveka Nand Sharma
Address of Applicant :Research scholar, Usha Martin University, Village Narayansoso Block Office Ranchi - Purulia Road, Highway, Angara Ranchi Jharkhand India 835103.
2)Shailendra Kumar Rai
3)Devashish Pandey
4)Vimal Kumar
5)Dr. Suvojit Ganguly
6)Dr. Priyanka Rana
(72)**Name of Inventor :**
1)Viveka Nand Sharma
2)Shailendra Kumar Rai
3)Devashish Pandey
4)Vimal Kumar
5)Dr. Suvojit Ganguly
6)Dr. Priyanka Rana

(57) Abstract :
The present invention provides artificial intelligence-based reservation, registration, and check-out procedure in the hotel industry. The system (100) is time-efficient. The system (100) recommends the hotels for every user separately as per requirements. The system (100) is operated from a remote location. The system (100) includes one or more hotels, an electronic device, a database, and a controller. The hotels provide lodging to a user. The reservation is done once a predefined percentage of payment is done by the user and by submitting a live face image using a vision sensor and a voice note recorded using a microphone of the electronic device. The submitted face image and the voice note is stored by the system (100) in the database for verification purposes at the time of check-in.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/03/2022

(21) Application No.202231014253 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED HOTEL SECURITY SYSTEM

(51) International classification	:B60Q0005000000, G08B0013240000, B60R0025100000, G01R0031520000, G06N0003020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Viveka Nand Sharma
Address of Applicant :Head-Department of Hospitality and Hotel Administration, Assam Don Bosco University, Tapesia Gardens, Kamarkuchi, Sonapur Tepesia Assam India 782402
2)Nikhil Saini
3)Dr. Sumit Kumar Biswakarma
4)Pawan Ailawadi
5)Subhasis Maiti
6)Shailendra Kumar Rai
(72)**Name of Inventor :**
1)Viveka Nand Sharma
2)Nikhil Saini
3)Dr. Sumit Kumar Biswakarma
4)Pawan Ailawadi
5)Subhasis Maiti
6)Shailendra Kumar Rai

(57) Abstract :
The present invention relates to an artificial intelligence-based hotel security system (100). The system (100) is economical. The system (100) generates an alert for a user. The system (100) is energy efficient. The system (100) generates the security threat alert. The system (100) is operated from a remote location. The system (100) includes a recording unit, a monitoring unit, a judgment unit, and an alarm unit. The controller determines whether a current sound decibel value is higher than the preset sound decibel threshold and decides the abnormal activities of customers and hotel staff. The input terminal of a controller is connected to an alarm unit. The alarm unit is configured to trigger a hotel alarm when a current sound decibel value is higher than a preset sound decibel threshold and activities of customers and staff are abnormal.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/03/2022

(21) Application No.202231014362 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : JOJOBA BIODIESEL BASED BIOFUEL COMPOSITION AND METHOD FOR PREPARATION THEREOF

(51) International classification	:C10L0001020000, C11C0003000000, A61K0008920000, C10L0001190000, C10L0001320000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Narula Institute of Technology
Address of Applicant :81, Nilgunj Road, Agarpara, Kolkata - 700109, West Bengal, India.
(72)**Name of Inventor :**
1)Dr. Sumit Nandi
2)Debopriya Dey

(57) Abstract :
The present invention related to a jojoba biodiesel based biofuel comprising: a Jojoba biodiesel in the range of 40% v/v to 60% v/v, and a diesel in the range of 40% v/v to 60% v/v. A method for preparation of the biofuel composition comprises the steps of: heating jojoba oil for 1 hour at temperature range of 70-80oC for removing moisture followed by centrifugation of the oil for removing solid impurities to obtain pure oil, performing transesterification reaction between the pure oil and methanol for 6 to 10 hours in the presence of 4% to 7% biocatalyst to obtain a reaction mixture, cooling the reaction mixture to room temperature followed by centrifugation for separating the biocatalyst from the mixture, thereby obtaining pure jojoba diesel, and blending the jojoba diesel with a conventional diesel fuel by slow mixing and continuous stirring in order to obtain the biofuel composition.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/03/2022

(21) Application No.202231014363 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CONCRETE SURFACE SMOOTHENING DEVICE

(51) International classification :G01N0029070000, E01C0019400000, E04G0021100000, G01F0023296000, G06K0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Narula Insitute of Technology
Address of Applicant :81, Nilgunj Road, Agarpara Kolkata - 700 109, West Bengal, India.
(72)**Name of Inventor :**
1)Dr. Anilesh Dey
2)Arnab Nag
3)Dr. Sandhya Pattanak
4)Dr. Sangita Roy
5)Moupali Roy
6)Soumen Pal
7)Arpita Barman Santra
8)Arnima Das
9)Pranab Hazra
10)Abhijit Ghosh
11)Kaushik Sarkar
12)Dr. Surajit Bari
13)Rimpi Datta
14)Amit Nigam
15)Dr. Saradindu Panda

(57) Abstract :
A concrete surface smoothening device comprising of a body 1 portioned into first and second layers 2 , 3 to smoothen a concrete surface, a moisture sensor 4 linked with a displacement sensor 5 in association with a microcontroller for determining the moisture content and thickness of the concrete surface respectively, wherein the microcontroller on receiving signals calculates occurrence of stress fractures that are displayed on a display panel 6, an ultrasonic sensor 7 for determining the size of dry concrete flakes, a pair of telescopic suction rods 8 to suck up the dry concrete flakes, a level sensor 9 and an Artificial Intelligence (AI) camera 10 for determining the level of the concrete surface and for capturing real time images of the concrete surface respectively, an appendage 12 arranged with a motorized sliding rack 11 to further smoothen the concrete surface as detected by the sensor 9 and camera 10.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/03/2022

(21) Application No.202231014793 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COST ORIENTED AUTONOMOUS WINDOW CLEANING ROBOT COMMENCING MECHATRONIC SCRAP

(51) International classification	:B25J0009160000, B25J0009000000, G06N0003000000, G06F0016958000, B25J0019000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr. SUPRIYA SAHU
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG, DHENKANAL, ODISHA, INDIA, 759146
(72)**Name of Inventor :**
1)Dr. SUPRIYA SAHU

(57) Abstract :
Reuse of materials is chiefly restricted in the partition of significant materials from mechanical and gadgets scrap, yet there is one more open door in utilizing the mechatronics scrap, to assemble robots, the robots work from scrap are restricted to its capacity and capacity yet they are financially perception. Furthermore, building them can be exceptionally instructive for understudies in mechatronics field. One of the robot family worked for University needs is Beggar Robot. Asking is an act of asking some help with no return back, favors can be money related yet additionally gifts, food and so on The thought behind hobo robot comes from a Slovenian craftsman Sašo Sedlaček, who assemble a portion of these robots in various nations yet the specialized arrangement and the structure of this specific robot was finished by us. The robot was worked from old PC materials for example, the PC cases to fabricate the body, CD rom to assemble the hands, and old screen to supplant the face, and modest gadgets and open source control sheets. In view of truth, that building robots with just about zero expense we can close will give a very significant experience and delivers a gateway to gets into robotic building from e-scarp. So main goal is to nBot is the idea of a compact robot which is able to clean the windows of a house or a building, is quite attractive, so main goal has been the realization of robot which is able to clean windows but also a main goal was to be realized the robot with minimal costs of 18.02.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/03/2022

(21) Application No.202231015035 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IMPACT OF RELATIVE HUMIDITY AND TEMPERATURE RELIANT THERMAL CONDUCTIVITY OF INSULATION MATERIALS ON HEAT TRANSFER THROUGH THE BUILDING ENVELOPE

(51) International classification :E04B0001740000, E04B0001760000, F24S0020660000, C03C0013060000, C30B0029220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)ANITA PRITAM
Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH (OUTR - FORMERLY CET), KALINGA NAGAR, GHATIKIA , BHUBANESWAR, ODISHA, INDIA, 751029.
2)ASUTOSH PARIDA
3)Dr. KANCHAN KUMARI
4)SIBASIS HARIHAR SAHU
5)LIPIKA MISHRA
6)Mr. BIBHU PRASAD GANTHIA
(72)**Name of Inventor :**
1)ANITA PRITAM
2)ASUTOSH PARIDA
3)Dr. KANCHAN KUMARI
4)SIBASIS HARIHAR SAHU
5)LIPIKA MISHRA
6)Mr. BIBHU PRASAD GANTHIA

(57) Abstract :
Persistent thermal conductivity standards of insulating constituents are naturally cast-off in designing building and valuation. However, the thermal conductivity be contingent on several elements, such as on the moisture and temperature content. Undeviating temperature-dependentlaws have been sporadically projected for inorganic fibrous constituents such as rock wool/fiberglass that display a reduced thermal conductivity with significant performance at minimal temperatures. However, the insulating materials based on petrochemical-foamed like poly-isocyanurate, have a smaller amount of steady temperature reliant behaviors with a inferior enactment at both exceptionally thermaland cold temperatures. This results on the usage of continual thermal conductivity principles upshots in definite building envelope enactment diverse from the design forecasts, with growing building energy depletions, superior risks of strengthening disputes, and reduced inhabitants' relief. This invention targets to measure the impact of the temperature dependence of the thermal conductivity in external walls and plane roofs. Investigational results over a enormous temperature array (from -25°C to +65°C) for diverse insulating materials were used in hygro-thermal imitations in both interior and moist temperate weathers. Collective insulating materials were engaged into accounts like rock wool, fiberglass, poly-isocyanate, and polystyrene extruded. The upsurge in the fluxes of energy from communal building envelopes once the active thermal conductivity was measured bring about less than 15% for walls and as high as 75% recorded in roofs, specifically in the cold conditions. As a final point, a hybrid insulation system established by binary layers of diverse materials, like a polyisocyanurate and a rock wool is inspected in this invention

No. of Pages : 14 No. of Claims : 8

Publication After 18 Months:

The following Patent Applications have been published under Section 11A (3) of The Patents (Amendment) Act, 2005. Any Person may file representation by way of opposition to the Controller of Patents at the appropriate office against the grant of the patent in the prescribed manner under section 25(1) of the Patents (Amendment) Act, 2005 read with the rule 55 of The Patents (Amendment) Rules, 2006:

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202011043767 A

(19) INDIA

(22) Date of filing of Application :08/10/2020

(43) Publication Date : 15/04/2022

(54) Title of the invention : NOVEL ANTIPARASITIC AGENTS BASED ON PIPERAZINE AND USES THEREOF

(51) International classification	:A61K0031419200, C07D0487040000, C07D0513100000, A61K0031437000, C07C0069757000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NATIONAL INSTITUTE OF IMMUNOLOGY
Address of Applicant :Aruna Asaf Ali Marg, New Delhi – , India Delhi India
2)HANSRAJ COLLEGE
(72)**Name of Inventor :**
1)Agam P Singh
2)Brijesh Rathi
3)Neha Sharma

(57) Abstract :
The present invention provides novel compounds of formula I, pharmaceutically acceptable salts thereof, pharmaceutical compositions thereof and method for the treatment and prevention of malaria infection and transmission in a mammal.

No. of Pages : 25 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043851 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COLD PRESSED TECHNIQUE TO YIELD TASTY AND HEALTHY MUSTARD OIL

(51) International classification	:C11B0001040000, C11B0001060000, A61K0036310000, C11B0001100000, A23D0009020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GUNJAN TYAGI
Address of Applicant :305 A/2 SOMDUTT VIHAR MEERUT UP Uttar Pradesh India
2)ARVIND KUMAR TYAGI
(72)**Name of Inventor :**
1)KAPIL DEV TYAGI
2)GUNJAN TYAGI
3)VAIBHAV BHUSHAN TYAGI

(57) Abstract :
A cold pressed oil extraction system (1) that eliminates mixing of Sulphur containing toxic compounds from the seeds residue such as PTC in extracted oil and produces bitter taste free oil. The system (1) includes specially designed screw barrel (2) for extracting bitter taste free cold pressed oil. The vacuum nozzles are used for sucking oil through filters (3). A hopper (4) is used for feeding the mustard seeds into screw barrel (2). There is an outlet for throwing the residue cake (5) and a pipe is connected with nozzles (6) for collecting the extracted oil. A motor attached with screw through the shaft (7) is used for rotating the screw and whole system is fixed on a stand (8). The shorter crushing duration obtained by specially designed system also avoids rise in the extracted oil temperature apart from eliminating the possibilities of mixing the toxic compound with the extracted oil.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020
(21) Application No.202011043853 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FULLY ACTIVE DEAD-ZONE CIRCUIT WITH HIGH PRECISION AND SUITABLE FOR IC DESIGN

(51) International classification	:H03F0003450000, H03K0017955000, H03H0011040000, H05B0045370000, G05F0003260000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
Address of Applicant :Jaypee Institute of Information Technology, A-10, Sector 62, Noida - 201309, Uttar Pradesh, India Uttar Pradesh India
(72)**Name of Inventor :**
1)ATUL KUMAR
2)BHARTENDU CHATURVEDI
3)JITENDRA MOHAN

(57) Abstract :
A fully active dead-zone circuit comprises of two operational transconductance amplifiers (1, 2) provided with input voltage (Vin), upper threshold voltage level of dead-zone (VTH) and lower threshold voltage level of dead-zone (VTL); a differential voltage current conveyor (3) provided with two input terminals (Y1 and Y2) and an output terminal (Vo), and eight MOSFET based switches (M1, M2, M3, M4, M5, M6, M7, M8). The output terminals of the operational transconductance amplifiers (1, 2) control the MOSFET based switches (M1, M2, M3, M4, M5, M6, M7, M8) to provide the input voltage (Vin), the upper threshold voltage level (VTH) or the lower threshold voltage level (VTL) at the input terminals (Y1 and Y2) of the differential voltage current conveyor (3) and the difference of the voltages of the input terminals (Y1 and Y2) appears at the output terminal (Vo) of the differential voltage current conveyor (3).

No. of Pages : 29 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043856 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A CONTAINER PACKAGING ASSEMBLY

(51) International classification	:B67B0003200000, B65B0007280000, B67B0003260000, B65D0041340000, B65D0005500000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MANKIND PHARMA LTD.
Address of Applicant :208, Okhla Industrial Estate, Phase III, New Delhi 110020, India Delhi India
(72)**Name of Inventor :**
1)MISHRA, Soumyanath
2)BANSAL, Amit
3)KUMAR, Anil

(57) Abstract :
A container packaging assembly system comprising of a plurality of components of an aluminium body structure comprising of a container stand (1), a rotary motor (2), a cam-follower system (3), a nozzle inserter (4), a cap tightening system (5), a container clamping or mounting part (6), a torque measurement device (7), a reciprocator motion switch (8), rotary motor switch (9), a speed regulator knob (10) and an ON/OFF switch (11). The container packaging assembly of the present invention provides a dual function semi-automatic machine for nozzle insertion and cap tightening system which is regulated by the application of pre-determined torque to the cap which aids in the tightening of the cap in more efficient way.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043914 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WATER LEVEL MONITORING SYSTEM

(51) International classification	:G01F0023296000, G01F0023000000, G05D0009120000, D06F0033000000, G01M0003280000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
(72)**Name of Inventor :**
1)RANI, Shalli
2)GUPTA, Divya
3)BABBAR, Himanshi
4)GARG, Sahil
5)MALHOTRA, Jyoteesh

(57) Abstract :
The present disclosure pertains to a water level monitoring system (100), including a tank (102), a tube, a first set of sensors (108) configured to sense water level inside the tank (102) and correspondingly generate a first set of signals, a second set of sensors (110) configured to sense air pressure inside a tube and the tank (102) and correspondingly generate a second set of signals, a valve (104) fluidically coupled with a tube and the tank (102), a motor (106) and a processing unit (112). The processing unit (112) is configured to receive the second of signals and actuate the valve (104), compare the quantity of the water with a first predetermined water level limit and a second predetermined water level limit, generate a first set of alarm signals when the compared quantity of the water is within the first predetermined water level limit and a second set of alarm signals when the compared quantity of the water is within the second predetermined water level limit.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043915 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN APPARATUS FOR PROVIDING MEDITATION

(51) International classification	:G02C0007080000, A61N0005060000, F16M0011240000, F16M0011180000, G06T0005400000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
(72)**Name of Inventor :**
1)DUTT, Ishwar

(57) Abstract :
The present disclosure relates to an apparatus (100) for providing riveted concentration and focus to a user practicing meditation. The invention provides for a height adjustable stand (112) that can modify and regulate the height depending on the comfort of the user. A light illumination assembly (110) along with concentration enhancing images (114) are provided in the apparatus (100) that can enable the user to practice meditation for a long duration.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043916 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR ENERGY MANAGEMENT OF ELEVATORS

(51) International classification	:B66B0005000000, B66B0001340000, B66B0001280000, H04Q0009000000, H04L0009300000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
(72)**Name of Inventor :**
1)MALHOTRA, Reetu
2)JAIN, Armaan

(57) Abstract :
The present disclosure relates to a system (100) for energy management of elevator, the system includes an elevator carriage (102) configured in shaft of the elevator, the elevator carriage adapted to accommodate one or more objects, one or more pulleys (104) configured on top portion of the elevator carriage, and on the top portion of the shaft. A controller (204) receive, from one or more sensors (202), the set of attributes of the elevator carriage, and transmit, from a transceiver (208), the set of attributes to a memory device, to extract set of values, wherein, based on the determination of the extracted set of values from corresponding reference range of values in the memory device, the controller is configured to control motors (108) and electronic devices (212) to facilitate energy management in the elevator.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2020

(21) Application No.202011043948 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A HEADBAND ADJUSTING DEVICE

(51) International classification	:H04R0005033000, A61N0007020000, A41D0013110000, A42B0003140000, A43B0003120000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KARAM SAFETY PRIVATE LIMITED
Address of Applicant :D-95, Sector-2, Noida-201301, Uttar Pradesh, India Uttar Pradesh India
(72)**Name of Inventor :**
1)NIGAM, Rajesh

(57) Abstract :
The present invention relates to a headband adjusting device having anti-skid property. The disclosed headband adjuster is flexible which provides a snug fit to the face and head of wearer and is also re-usable. In particular, headband adjuster has a plurality of one type of slots which are interconnected to a second type of wider slot to form a continuous channel for passage of a headband/loop therefrom and tightly securing the headband in the first type of slot of the adjusting device. The headband adjuster allows for easy adjustment of the headband to fit a variety of head diameters of the wearer.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044012 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR AUTO BINDING GRAPHICS TO COMPONENTS IN A BUILDING MANAGEMENT SYSTEM

(51) International classification	:G05B0015020000, G03B0013360000, G03B0003100000, G06Q0010060000, H04L0012280000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Honeywell International Inc.
Address of Applicant :300 S. Tryon Street, Suite 600, Charlotte, NC 28202, USA U.S.A.
(72)**Name of Inventor :**
1)Nostrini, Marco
2)Ranjan, Prabhat
3)Foxley, Rory
4)Nadumane, Venugopala Kilingar
5)Singh, Rajiv

(57) Abstract :
A method of configuring a building management system for operation, the building management system including a plurality of building system components, the method comprising: accessing a widget library, the widget library comprising a plurality of individual images that each represent operation of one or more building system components; dragging and dropping one or more individual images from the widget library onto an editor page; dragging and dropping one or more points of the one or more building system components onto each of one or more of the individual images on the editor page; in response to dragging and dropping the one or more points onto each of one or more of the individual images on the editor page, automatically binding the one or more points with the respective individual image; and saving the individual images along with the binding with their respective one or more points.

No. of Pages : 47 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020
(21) Application No.202011044034 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENERGY EFFICIENT DC REVERSE POLARITY PROTECTION WITH UNINTERRUPTED DC SUPPLY

(51) International classification	:H02H0011000000, H02J0007000000, H02J0009060000, B41M0007000000, H02J0009000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Schneider Electric IT Corporation
Address of Applicant :132 Fairgrounds Road, West Kingston, Rhode Island 02892, United States of America U.S.A.
(72)**Name of Inventor :**
1)MISHRA, Sushanta Kumar

(57) Abstract :
Examples provide a power system comprising a first DC connection configured to be connected to a positive terminal in a first configuration and a negative terminal in a second configuration, a second DC connection configured to be connected to the positive terminal in the second configuration and the negative terminal in the first configuration, a positive output connection, a negative output connection, and at least one relay device having a plurality of relays connected between the first and second DC connections and the positive and negative output connections, wherein the at least one relay device is configured to provide a first current path, from the first DC connection to the positive output connection in a first switching state, and wherein the at least one relay device is configured to provide a second current path, from the negative output connection to the first DC connection in a second switching state.

No. of Pages : 33 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044104 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND APPARATUS FOR DRY COATING OF POWDERS

(51) International classification	:B65B0069000000, B05B0007140000, C09D0005030000, B29C0064214000, B01J0008380000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Thapar Institute of Engineering and Technology, Patiala
Address of Applicant :Thapar Institute of Engineering and Technology, Bhadson Road, Patiala, Punjab - 147004, India. Punjab India
(72)**Name of Inventor :**
1)SETIA, Gautam
2)SHARMA, Rahul

(57) Abstract :
The present disclosure relates to system (100) for dry coating of powder particles. The system (100) includes a first container (102) configured to receive the powder particles, a second container (104) operatively coupled with the first container (102), and configured to receive the powder particles from the first container (102). A suction pipe (110) removably coupled with the second container (104) and configured to receive the powder particles from the second container (102), and a first end of the suction pipe (110) is configured with a dry coating element/conveyor pipe for facilitating the powder particles from the suction pipe (110) back to the first container (102). The suction pipe (110) has a first pipe, inside the suction pipe, proximate to an opening (120) of the second container (104) to provide a venturi effect to the powder particles coming from the second container (104).

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044105 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A MOUNTING APPARATUS FOR A FAN TO REDUCE RISK OF DISASTER DUE TO EXCESS LOAD

(51) International classification	:G06K0009000000, F04D0027000000, F04D0029600000, F04D0019000000, B64C0025000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
(72)**Name of Inventor :**
1)KUMAR, Keshav
2)RAMKUMAR, K.R
3)KAUR, Amanpreet

(57) Abstract :
The present disclosure provides a mounting apparatus for a fan, which includes: a mounting element coupling the fan to a support structure such that the fan is at a predetermined height from a ground, the mounting element configured to move from a contracted state to an extended state on receipt of a first signal, wherein, when the mounting element moves to the extended state, the fan moves towards the ground; a sensor coupled to the mounting element and configured to detect a load acting on the mounting element; and a controller configured to generate the first signal when the load is greater than a threshold value, and the mounting element moves to the extended state leading to a relative decrease in the predetermined height. The threshold value is indicative of load placed on the mounting element in addition to weight of the fan.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044117 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADAPTIVE MULTIPATH TUNNELING IN CLOUD-BASED SYSTEMS

(51) International classification	:H04L0012707000, H04L0029060000, H04L0012825000, H04L0012801000, H04L0012703000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Zscaler, Inc.
Address of Applicant :120 Holger Way, San Jose, CA 95134, USA U.S.A.
(72)**Name of Inventor :**
1)Bansal Abhinav
2)Goyal Rohit

(57) Abstract :
Systems and methods implemented by a mobile device (300) include establishing a plurality of tunnels to a gateway (150), wherein each of the plurality of tunnels is on one of a plurality of link layer channels at the mobile device (300); intercepting network traffic on the mobile device (300); forwarding the network traffic to one of the plurality of tunnels based on a set of traffic forwarding rules; and responsive to a network change for the mobile device (300), managing the plurality of tunnels and continuing the forwarding based on the managing. The systems and methods can further include determining characteristics including bandwidth of each of the plurality of link layer channels; and utilizing the characteristics with the set of traffic forwarding rules for the forwarding.

No. of Pages : 62 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044124 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : OXIDE DISPERSION STRENGTHENED IRON ALUMINIDES WITH HIGH STRENGTH AND DUCTILITY AND METHOD OF PREPARATION OF THE SAME

(51) International classification	:C22C0032000000, C22C0001040000, C22C0038060000, C22C0038000000, C22C0001100000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI)
Address of Applicant :Plot No. 102, Institutional Area, Sector 44, Gurgaon Haryana INDIA 122003 Haryana India
(72)**Name of Inventor :**
1)Pothula Vijaya Durga
2)Sreedhara Sudhakara Sarma
3)Konduri Satya Prasad
4)Aramadaka Venugopal Reddy
5)Ravula Vijay

(57) Abstract :
The invention relates to oxide dispersion strengthened iron aluminide (ODS Fe3Al) alloys and method of preparation of the same. It is consisting of Al: 12 to 23 %, Cr: 2 to 10 %, Ti: 0.1 to 0.5 %, Zr: 0 to 0.5 %, Y2O3: 0.1 to 0.5 and the balance is Fe by weight percentage. The process of producing ODS Fe3Al initiated by producing pre-alloyed powder by inert gas atomization. The pre-alloyed and nano yttrium oxide powders are ball milled, then degassed and vacuum sealed in mild steel cans followed by hot upset forging, hot extrusion and heat treatment. The resultant ODS Fe3Al shows DO3 structure and contains finely distributed nano complex oxide particles, which strengthen the grain boundaries by pinning them and also help in retaining the fine grained structure. The alloys exhibit a great combination of strength and ductility at room temperature as well as at high temperatures.

No. of Pages : 26 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020
(21) Application No.202011044165 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTEGRATED FOREST MANAGEMENT SYSTEM

(51) International classification	:G06Q0010080000, H04W0084200000, H04N0007180000, G01D0021020000, H04L0012260000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Satheesh Abimannan

(57) Abstract :
An integrated forest management system (100) for acquiring and archiving forest information in a lightweight file system is disclosed. The integrated forest management system (100) includes multiple sensory network clusters (110). The each cluster (100) of the integrated forest management system (100) includes a plurality of slave nodes (102), a master node (104), and a data collection center (106). The master node (104) is configured with a lightweight file system to store the cluster data and the data regarding the one or more forest assets. The integrated forest management system (100) is configured to acquire data regarding the one or more forest assets and to monitor said data using a cloud based remote monitoring device (202).

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044166 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR PREDICTING SEVERE MATERNAL MORBIDITY (SMM) IN PREGNANT AND POST-PARTUM WOMEN

(51) International classification	:C12Q0001688300, A61M0025010000, A61K0035545000, G16H0050300000, G06N0003080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. B Balamurugan
2)Dr. R Lakshmana Kumar

(57) Abstract :
The present invention relates to a field of medical science, particularly for predicting a probability of developing a severe maternal morbidity (SMM) during or after the term of pregnancy in a woman. The invention is based on using artificial intelligence algorithm for predicting the risk of morbidity along with the level of hazard associated with the gestation and the childbirth. The method herein described is less time consuming and more accurate for predicting the onset of a severe maternal morbidity (SMM) for specific as well as non-specific conditions.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/10/2020

(21) Application No.202011044167 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MULTI-PURPOSE CLEANSING SOLUTION

(51) International classification	:A47L0011400000, C11D0003380000, D06L0001040000, C11D0003500000, A61K0008920000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Meenakshi Singh

(57) Abstract :
A multi-purpose cleansing solution is proposed in the present application. The main ingredients of the cleansing solution are dodecyl benzene sulfonic acid, tri sodium phosphate, urea, caustic soda, glycerin and essential oil. The composition of above ingredients is formulated in a way that the present cleansing solution imparts surprisingly effective and fast cleaning results. The proposed solution is useful for, included but not limiting to, cleaning or dry cleaning fabrics, wiping down and cleaning floors, surfaces such as work platforms walls and windows and kitchen utensils etc.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2020

(21) Application No.202011044179 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FORMULATION OF A NEWLY SYNTHESIZED GOMUTRA-IN-DIESEL EMULSION

(51) International classification	:C10L0010020000, C10L0001020000, F02B0047020000, C10L0001180000, F02D0041000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Amit Jhalani
Address of Applicant :Department of Mechanical Engineering, Malaviya National Institute of Technology, JLN Marg, Malviya Nagar, Jaipur Rajasthan India
2)Dr. Dilip Sharma
3)Dr. S.L. Soni
(72)**Name of Inventor :**
1)Amit Jhalani
2)Dr. Dilip Sharma
3)Dr. S.L. Soni
4)Digambar Singh
5)Pushpendra Kumar Sharma

(57) Abstract :
The idea developed in this work of gomutra emulsification in diesel has not been investigated before. A substantial investigation to assess the applicability of this newly synthesized emulsion on the basis of stability, physicochemical properties, engine performance, and exhaust emissions hasbeen performedand the results are compared with the base fuel diesel.An emulsion with 82% diesel, 15% gomutra distillate and 3% emulsifier was found to be applicable with a remarkable increase in brake thermal efficiency (BTE). The BTE reached up to 24.8% as compared to 21.9% with plain diesel fuel which is a significant 13.2% increase. From pollution control point of view, NOx and smoke got reduced by maximum up to 31.8% and 36.9% respectively.Overall, this GMD emulsion was found to be an energy-efficient and cleaner alternative fuel for stationary C.I. engine. Moreover, the invention will also be beneficial for rural development and waste management.

No. of Pages : 21 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2020

(21) Application No.202011044197 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR SPEECH-EMOTION RECOGNITION OF A SPEECH IMPAIRED PERSON

(51) International classification	:G06K0009000000, G11B0031000000, G10L0013000000, G10L0015240000, G10L0021036400
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Satyajee Srivastava
2)Dr. Raju Ranjan
3)Arti Ranjana
4)Aditya Prashant

(57) Abstract :
A system (100) for speech-emotion recognition of a speech impaired person is disclosed. The system is deliberated to be used by an attendee to better recognize and fulfill the need of a person by recognizing speech-emotion using facial expression and gestures of a person, more particularly, of a speech-impaired child. The present invention further discloses a method (200 for recognizing speech-emotions of a person with the aid of machine learning.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2020

(21) Application No.202011044198 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DETECTION AND CLASSIFICATION OF TUMORS USING FCN SEGEMENTATION

(51) International classification	:G06T0007000000, A61B0005055000, G06T0007110000, G06N0003040000, G06T0007120000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Email ID: Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. J N Singh
2)Mr. Sanjay Kumar
3)Dr. Naresh Kumar
4)Dr. Sansar Singh Chauhan
5)Dr. Inderpreet Kaur

(57) Abstract :
A computer-implemented method (300) for automatic detection and classification of a brain tumor comprising: receiving magnetic resonance images of a brain tumor scan of a patient (101), wherein the magnetic resonance images of the brain tumor scan of the patient (101) are obtained as an input from a scanning device (107); pre-processing the magnetic resonance images of the brain tumor scan by the data processing module (202), wherein the pre-processing of the magnetic resonance images are used to correct non-uniformity, brightness, sharpening, noise reduction, or a combination of thereof; performing brain tumor image segmentation on the pre-processed images by using a Full Convolutional Network (FCN); extracting features from the segmented images; analyzing the extracted features to detect a presence or absence of the brain tumor; and generating a report based on the analysis of the extracted features.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2020

(21) Application No.202011044209 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVICE AND METHOD FOR REMOVING INK FROM PAPER

(51) International classification	:D21C0005020000, A61B0017320000, B41J0011000000, B41J0002165000, B02C0018000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Ajay Kumar Garg Engineering College
Address of Applicant :27th Km Milestone, Delhi - Hapur Bypass Road, Adhyatmik Nagar, Ghaziabad – 201009, Uttar Pradesh, India. Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Umesh Kumar Vishwakarma
2)Divyanshu Paliwal
3)Anushree Asthana
4)Aman Gupta
5)Anurag Kumar Yadav
6)Adarsh Kumar Verma

(57) Abstract :
A device comprising a box 1 developed to receive a paper 2, an abrasive roller 5 engaged with the box 1, that rotates and translates along the length of the box 1, for creating a grinding action on the paper 2 for removing ink present on the paper 2, a spray tube 6 contained with a chemical agent 11, for dispensing the chemical agent on the grinded paper 2 to enhance quality of the paper, two pair of motorized (connected to motors) rack and pinion mechanisms 7, 8 to enable translation and rotation of the roller and tube. The method includes the steps: inserting and placing a paper inside the box, turning ON the motor associated with the roller to enable its rotation and translation for removing ink present on the paper and turning ON the motor associated with the spray tube to dispense the whitening agent on the paper.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044253 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NAVEL METHOD TO ANALYZE LIVER CANCER GROWTH USING COMPUTATIONAL NEURO-ASSOCIATOR MARKAV

(51) International classification	:A61B0005045200, A61B0090000000, A61K0031443900, G16H0050500000, C12N0005090000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)DR. TULIKA CHAKRABARTI
Address of Applicant :SIR PADMPAT SINGHANIA UNIVERSITY UDAIPUR-313601,RAJASTHAN Rajasthan India
2)DR. BUI THANH HUNG
3)DR. PINAKI PRATIM ACHARYA
4)MR. SOUMYA MUKHERJEE
5)DR. AVIJIT BHOWMICK
6)DR. NIRAJ MEHTA
7)DR. SANDEEP PODDAR
8)DR. PRASUN CHAKRABARTI
(72)**Name of Inventor :**
1)DR. TULIKA CHAKRABARTI
2)DR. BUI THANH HUNG
3)DR. PINAKI PRATIM ACHARYA
4)MR. SOUMYA MUKHERJEE
5)DR. AVIJIT BHOWMICK
6)DR. NIRAJ MEHTA
7)DR. SANDEEP PODDAR
8)DR. PRASUN CHAKRABARTI

(57) Abstract :
We propose to invent discovered facts that the analysis of intensity of liver cancer growth can be governed by neuro-associator and Markov property .concept learning and artificial neural modeling. Till date the principles have not been applied for liver cancer growth investigation. Markov property based state transition towards liver cancer analysis in the light of augmentation and expansion of features is a novelty

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044254 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A NOVEL METHOD TO ANALYZE LIVER CANCER GROWTH USING RSELIBKNN,SIMPLE CART AND KSTAR CLASSIFIERS

(51) International classification	:C12N0005090000, C12Q0001687600, H04B0017391000, H04L0012801000, C12N0015860000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DR. TULIKA CHAKRABARTI
Address of Applicant :SIR PADMPAT SINGHANIA UNIVERSITY UDAIPUR-313601,RAJASTHAN Rajasthan India
2)DR. BUI THANH HUNG
3)DR. ACHYUTH SARKAR
4)DR. NIRAJ MEHTA
5)MRS. RINKU SUPAKAR
6)DR. SYED KHASIM
7)DR. AMIT GUPTA
8)DR. PRASUN CHAKRABARTI
(72)**Name of Inventor :**
1)DR. TULIKA CHAKRABARTI
2)DR. BUI THANH HUNG
3)DR. ACHYUTH SARKAR
4)DR. NIRAJ MEHTA
5)MRS. RINKU SUPAKAR
6)DR. SYED KHASIM
7)DR. AMIT GUPTA
8)DR. PRASUN CHAKRABARTI

(57) Abstract :
We propose to invent discovered facts that the analysis of intensity of liver cancer growth can be governed by neuro-associator and Markov property .concept learning and artificial neural modeling. Till date the principles have not been applied for liver cancer growth investigation. Markov property based state transition towards liver cancer analysis in the light of augmentation and expansion of features is a novelty

No. of Pages : 13 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044308 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GRANULAR SAAS TENANT RESTRICTION SYSTEMS AND METHODS

(51) International classification	:H04L0029080000, G06F0021600000, H04L0012260000, H04L0029060000, G06F0008600000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Zscaler, Inc.
Address of Applicant :120 Holger Way, San Jose, CA 95134, USA U.S.A.
(72)**Name of Inventor :**
1)Deshmukh Pooja
2)Paul Narinder
3)Kumar Naresh
4)Kumar Santhosh
5)Manukonda Sravani
6)Bulusu Vijay

(57) Abstract :
Systems and methods include obtaining (402) a profile for an application (106), wherein the profile includes one or more tenants, rules for use of the application by the one or more tenants, and users (102) for the rules; monitoring (404) a user (102) of a tenant of the one or more tenants inline via a node (150) in a cloud-based system (100); identifying (406) an application (106) of the one or more applications based on the monitoring and associated rules for the user (102); and enforcing (408) the associated rules for the user (102) for the application (106).

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044319 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SPIDER HELMET LOCK

(51) International classification	:A42B0003040000, H04R0009040000, A42B0003300000, E21B0019100000, A42B0003120000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LALIT KUMAR
Address of Applicant :C/6, RATTAN PARK,NANGLOI DELHI, INDIA-110041 Delhi India
(72)**Name of Inventor :**
1)LALIT KUMAR

(57) Abstract :
India Government (vehicle act) making certain accessories compulsory on every bike sold in India, Indian helmets rule is strictly enforced all over country and Helmets lock too should be provided to boost helmets use. This will ensure that users have to worry about their helmets being stolen because of which they sometimes avoid using them. In this Innovation we merged these 2 safety features in a single component Means back rest/sheet handle grip attachment also be used to LOCK the HELMET and Enhance the application of Back rest/sheet handle grip.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044364 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WATER SUPPLY SYSTEM WITH HEAT EXCHANGER

(51) International classification	:C25B0001040000, G06Q0030020000, F24D0017020000, C02F0001000000, F25D0031000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Chitkara Innovation Incubator Foundation
Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
(72)**Name of Inventor :**
1)KUMAR, Rajesh
2)SINGH, Rickwinder

(57) Abstract :
The present disclosure discloses a water supply system with heat exchanger 100, said system 100 comprising a heat exchanging unit 110 that in turn, comprises a container 112 adapted to receive and contain water, and facilitate heat exchange at a first pre-defined rate and a plurality of extended members 114 configured across walls of the container 112, such that heat is exchanged, at a second pre-defined rate, between the water and the plurality of extended members 114. The system 100 comprises a pumping unit 120 coupled to the heat exchanging unit 110, wherein the pumping unit 120 enables pumping of the water from a first location associated with the container 112 to a second location outside the container 112. Power derived from solar energy can be utilized for operating the pumping unit 120.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044377 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IMPROVED HYBRID SOLAR COLLECTOR

(51) International classification	:H01L0031054000, H01L0031068000, H02S0040440000, H01L0031048000, H02S0040220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Rohit Tripathi
2)Prof. G. N. Tiwari
3)Dr. Sanjay Agrawal
4)Dr. Desh Bandhu Singh
5)Dr. Rashmi Agarwal

(57) Abstract :
A thermal collector (100) comprising: a bifacial photovoltaic module (102) to generate an electrical energy and a thermal energy such that the generated electrical energy is stored in a battery (108) connected to the bifacial photovoltaic module (102) and the generated thermal energy is used to heat water; parabolic concentrators (104a-104b) attached to the bifacial photovoltaic module (102) to concentrate incident solar radiations onto the bifacial photovoltaic module (102); and an insulation box (106) connected to the bifacial photovoltaic module (102) and the parabolic concentrators (104a-104b), wherein the insulation box (106) comprises: a tube in a plate collector (110) to hold the water to be heated; and an insulating layer provided at a bottom surface of the tube in the plate collector (110) to reduce bottom thermal losses.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044378 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTING FRAUD IN HEALTHCARE FIRMS

(51) International classification	:G06Q0020400000, G06Q0040000000, G06Q0050220000, G16H0040200000, G06F0021550000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. B Balamurugan
2)Dr. R Lakshmana Kumar

(57) Abstract :
Disclosed is a method to identify fraudulent activity committed by healthcare providers during a medical case, the method comprising steps of: collecting predefined data to train a fraud detection system; enabling healthcare specialists to enter parameters associated with a medical case; predicting a total expenditure of the medical case based on the determined parameters using an Artificial Intelligence (AI) algorithm; comparing the predicted total expenditure with a healthcare bill; and generating an alert when the healthcare bill is greater than the predicted total expenditure.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044379 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A CHATBOT FOR DIGITALLY ASSISTING A CUSTOMER

(51) International classification	:H04L0012580000, G06N0020000000, G06Q0030060000, G06Q0030020000, G06N0005040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. B Balamurugan
2)Dr. R Lakshmana Kumar

(57) Abstract :
A chatbot (100) for digitally assisting a customer by simulating a conversation related to beauty products is disclosed in the present invention. The chatbot includes an artificial intelligence engine (106) which incorporates an artificial intelligence mechanism to identify a relevant beauty product to the customer by learning customer's past preferences/purchases. The artificial intelligence engine (106) includes an input data module (108), a data training module (110), a data mapping module (112) and a recommendation module (114). The recommended product is based on the products, the customer had chosen in past and/or based on content filtering.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/10/2020

(21) Application No.202011044380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ELECTRONIC VOTING SYSTEM

(51) International classification	:G07C0013000000, H04L0009320000, G06Q0050100000, G06Q0050260000, H04L0001220000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Galgotias University
Address of Applicant :Plot No. 2, Yamuna Expy, Opp. Buddha International Circuit, Sector 17A, Greater Noida, Uttar Pradesh 201301 Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Sanjay Kumar
2)Dr. Avadhesh Kumar
3)Dr. Sandhya Katiyar
4)Dr. Sansar Singh Chauhan
5)Dr. Shraddha Sagar
6)Dr. Sanjay Pratap Singh Chauhan
7)Dr. Usha Chauhan
8)Dr. Naresh Kumar
9)Dr. B Balamurugan

(57) Abstract :
An electronic voting system (100) is disclosed in embodiments of the present invention. The electronic voting system (100) is based on neural network architecture (400) and facilitates a two-way authentication process. The electronic voting system (100) includes an electronic voting card and a provision for real-time biometric data identification for validating a genuineness voter. The present invention provides a flexibility to voters to cast their vote from their nearest available electronic voting system (100).

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/11/2020

(21) Application No.202017048091 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : APPARATUS AND METHOD FOR EVERTING CATHETER FOR IUD DELIVERY AND PLACEMENT IN THE UTERINE CAVITY

(51) International classification	:A61F0006180000, A61B0017340000, A61M0025100000, A61F0006140000, A61B0017420000
(31) Priority Document No	:62/913160
(32) Priority Date	:09/10/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/055070 :09/10/2020
(87) International Publication No	:WO 2021/072261
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CROSSBAY MEDICAL, INC.
Address of Applicant :13240 Evening Creek Drive, Suite 304 San Diego, California 92128 U.S.A.
(72)**Name of Inventor :**
1)BACICH, Steven R.
2)YUREK, Matthew Thomas
3)GREELIS, Jack
4)VIDYARTHI, Piush

(57) Abstract :
An everting balloon system is disclosed that can be used for the placement of an IUD within the uterine cavity of a female patient. The everting balloon system with IUD can be used to access a uterine cavity at specific locations in the fundus. A one-handed IUD delivery system for placement with an everting catheter is disclosed. An IUD loading system for placement within an everting catheter is disclosed. The everting catheter with an IUD can simplify the process of IUD placement within the uterine cavity.

No. of Pages : 48 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2021

(21) Application No.202114012797 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CAMERA MODULE

(51) International classification	:H04N0005225000, H04N0005232000, G02B0007080000, H04N0005770000, B60R0011040000
(31) Priority Document No	:10-2020-0131366
(32) Priority Date	:12/10/2020
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAMSUNG ELECTRO-MECHANICS CO., LTD.
Address of Applicant :Maeyoung-ro 150 (Maetan-dong), Youngtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea Republic of Korea
(72)**Name of Inventor :**
1)Hag Chul KIM
2)Tae Yeon LIM
3)Phil Ho JUNG
4)Yong Joo JO

(57) Abstract :
A camera module includes a first lens group; a first optical path folding unit; a second lens group; and a second optical path folding unit. The first lens group, the first optical path folding unit, the second lens group, and the second optical path folding unit are sequentially disposed from an object side of the first lens group toward an imaging plane of the camera module. The first optical path folding unit includes a first fixed reflective member and a first movable reflective member configured to vary a length of an optical path between the first lens group and the second lens group, and the second optical path folding unit includes a second fixed reflective member and a second movable reflective member configured to vary a length of an optical path between the second lens group and an imaging plane.

No. of Pages : 118 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/08/2021

(21) Application No.202114039274 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POWER CONVERSION DEVICE

(51) International classification	:H02J0003380000, G11C0011408000, G06F0001260000, C25B0001040000, H02M0007480000
(31) Priority Document No	:JP 2020-170276
(32) Priority Date	:08/10/2020
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FUJI ELECTRIC CO., LTD.
Address of Applicant :1-1, Tanabeshinden, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-9530, Japan Japan
(72)**Name of Inventor :**
1)ITOIGAWA, Nobuo
2)TANAKA, Daisuke
3)KATO, Hiroaki
4)ZOHDA, Daisuke

(57) Abstract :
A power conversion device (100) comprising: an inverter circuit (130) that is capable of converting at least power input from a photovoltaic power supply PPS of two power supplies into predetermined AC power and is capable of driving a motor M, wherein the two power supplies are the photovoltaic power supply (PPS) and a commercial power supply (CPS). Further, the inverter circuit (130), when power from the commercial power supply (CPS) starts to be supplied in a state where power is being supplied only from the photovoltaic power supply (PPS) of the two power supplies, is capable of shifting an operation to prioritize a second efficiency from power input from the commercial power supply (CPS) to conversion to the predetermined AC power over a first efficiency from power generation of the photovoltaic power supply (PPS) to conversion to the predetermined AC power. In another embodiment, a method capable of driving a load device more stably and efficiently by using power from a photovoltaic power supply and a commercial power supply is also provided.

No. of Pages : 52 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/09/2021

(21) Application No.202114040306 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SWITCHING ARRANGEMENT

(51) International classification	:F01N0003200000, H01L0029740000, F01N0013000000, H02J0009060000, H01P0001150000
(31) Priority Document No	:2016017.2
(32) Priority Date	:09/10/2020
(33) Name of priority country	:U.K.
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Eaton Intelligent Power Limited
Address of Applicant :Eaton House, 30 Pembroke Road, Dublin 4, Ireland Ireland
(72)**Name of Inventor :**
1)Cejnar Pavel

(57) Abstract :
A switching arrangement (1) for switching off an electric current with a high slew rate, especially a short-circuit current, it is suggested, that 5 the switching arrangement (1) comprises - a main line (2) with a first SCR-arrangement (3) comprising at least a first SCR (4) and a first reverse conducting diode (5) arranged in parallel to the first SCR (4), - a first bypass line (6) connected to the main line (2) and arranged 10 in a parallel way to the first SCR-arrangement (3), - the first bypass line (6) comprises a second SCR-arrangement (7) comprising at least a second SCR (8) arranged in the same polarity as the first reverse conducting diode (5), - the first bypass line (6) further comprises at least one capacitor 15 (9) and a DC-voltage source (10) connected to the capacitor (9) for pre-charging the capacitor (9).

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/09/2021

(21) Application No.202114040449 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A GEAR SYSTEM AND A METHOD FOR LUBRICATING A GEAR

(51) International classification	:F16H0057040000, E21B0003020000, C10M0141100000, C10M0137080000, F02C0007360000
(31) Priority Document No	:20201277.9
(32) Priority Date	:12/10/2020
(33) Name of priority country	:EPO
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Moventas Gears Oy
Address of Applicant :P.O. Box 158 / Vesangantie 1 40101 Jyväskylä Finland Finland
(72)**Name of Inventor :**
1)VUOLLE-APIALA, Tuomas
2)HEINO, Juha

(57) Abstract :
A gear system comprises at least one gear stage (103), a pump system (104) and oil channels (105) for circulating a first lubricant oil flow via first elements (107a-107c) of the gear stage and a second lubricant oil flow via second elements (109) of the gear stage, and an oil conditioning system (106) for controlling temperatures (T1, T2) of the first and second lubricant oil flows so that the temperatures of the first and second lubricant oil flows are different from each other and flow rates (F1, F2) of the first and second lubricant oil flows are different from each other. Thus, it is possible to utilize for example the fact that bearings do not need as much oil flow as gear wheels but, on the other hand, lowering oil temperature of the bearings provides more advantages than lowering oil temperature of the gear wheels.

No. of Pages : 23 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/09/2021

(21) Application No.202114040892 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SEMICONDUCTOR DEVICE

(51) International classification	:H01L0029780000, H01L0023000000, H01L0023290000, H01L0029060000, H01L0023495000
(31) Priority Document No	:2020-171432
(32) Priority Date	:09/10/2020
(33) Name of priority country	:Japan
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)DENSO CORPORATION
Address of Applicant :1-1, Showa-cho, Kariya-city, Aichi-pref., 448-8661, Japan Japan
2)TOYOTA JIDOSHA KABUSHIKI KAISHA
3)MIRISE Technologies Corporation
(72)**Name of Inventor :**
1)HIROKI MIYAKE

(57) Abstract :
A semiconductor device (1) includes a p-type region (14) including superlattice pseudo-mixed crystal regions (14a, 14b) in which a first layer (14a) and a second layer (14b) are alternately stacked. The first layer includes a gallium oxide-based semiconductor. The second layer includes a p-type semiconductor made of a material different from the first layer.

No. of Pages : 22 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/09/2021

(21) Application No.202114041629 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD, DEVICE AND SYSTEM FOR RECOGNIZING AN ELECTRICAL OSCILLATION IN AN ELECTRICAL POWER SUPPLY SYSTEM

(51) International classification	:B60L0050510000, E21B0033035000, B60L0015020000, A47J0031000000, G08B0025010000
(31) Priority Document No	:20200786.0
(32) Priority Date	:08/10/2020
(33) Name of priority country	:EPO
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Siemens Aktiengesellschaft
Address of Applicant :Werner-von-Siemens-Straße 1, 80333 München, GERMANY Germany
(72)**Name of Inventor :**
1)Litzinger, Andreas
2)Piel, Stefan
3)Voigt, Reinhold

(57) Abstract :
Method, device and system for recognizing an electrical oscillation in an electrical power supply system The invention relates to a method for recognizing an electrical oscillation in an electrical power supply system, in which an electrical oscillation variable is determined for at least one measuring point (21) in the power supply system, parameters of an electrical oscillation are calculated on the basis of a time curve of the oscillation variable for the at least one measuring point (21), and the presence and type of an electrical oscillation is deduced using the parameters. To be able to provide correct parameters for assessing the oscillation in a timely fashion after the start of the oscillation, it is proposed that the number of those successive values of the oscillation variable from which the parameters of the electrical oscillation are calculated is adapted dynamically to the sequence of values of the oscillation variable.

No. of Pages : 33 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/09/2021
(21) Application No.202114042971 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DISPLAY DEVICE AND DRIVING METHOD

(51) International classification	:G09G0003360000, G06F0003041000, H01L0021425000, G09G0003200000, G09G0003323300
(31) Priority Document No	:63/090,333
(32) Priority Date	:12/10/2020
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)AU Optronics Corporation
Address of Applicant :NO. 1, LI-HSIN ROAD 2, SCIENCE-BASED INDUSTRIAL PARK, HSIN-CHU, TAIWAN
(72)**Name of Inventor :**
1)Che-Chia CHANG
2)Shang-Jie WU
3)Yu-Chieh KUO
4)Hsien-Chun WANG
5)Sin-An LIN
6)Mei-Yi LI
7)Yu-Hsun CHIU
8)Ming-Hung CHUANG
9)Yi-Jung CHEN

(57) Abstract :
A display device (1000) includes multiple of light-emitting elements (L1) and multiple of driving circuits (100; 200; 300; 400; 500; 600). Each of the multiple of driving circuits (100; 200; 300; 400; 500; 600) is configured to generate a driving current to illuminate one of the multiple of light-emitting elements (L1). Each of the multiple of driving circuits (100; 200; 300; 400; 500; 600) includes a first transistor (T1), a second transistor (T2), a first control circuit (110; 210; 310; 410; 510; 610) and a second control circuit (120; 220; 320; 420; 520; 620). The first control circuit (110; 210; 310; 410; 510; 610) is configured to control the first transistor (T1) to modulate pulse amplitude of the driving current. The second control (120; 220; 320; 420; 520; 620) circuit is configured to control the second transistor (T2) to modulate pulse width of the driving current.

No. of Pages : 68 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/10/2021

(21) Application No.202114044895 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VEHICLE REAR BUMPER STRUCTURE

(51) International classification	:B60R0019180000, B60R0009060000, B60R0019480000, B60R0019380000, B60R0019020000
(31) Priority Document No	:2020-171229
(32) Priority Date	:09/10/2020
(33) Name of priority country	:Japan
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)SUZUKI MOTOR CORPORATION
Address of Applicant :300 Takatsuka-cho, Minami-ku, Hamamatsu-shi, Shizuoka 432-8611, Japan Japan
(72)**Name of Inventor :**
1)Takuto IWAKIRI

(57) Abstract :
An aim of the present invention is to provide a vehicle rear bumper structure capable of improving the aesthetic appearance while ensuring the degree of freedom of layout of a garnish. A vehicle rear bumper structure 100 includes garnishes 104a and 104b attached to the vehicle rear side of a rear bumper 102, a plurality of through holes 110a and 110b provided in the rear bumper 102 in areas in which the garnishes 104a and 104b overlap the rear bumper 102, and holder members 106a and 106b that are provided on the vehicle front side of the rear bumper 102 so as to overlap the garnishes 104a and 104b, and are coupled to the garnishes 104a and 104b via the through holes 110a and 110b so as to hold the garnishes 104a and 104b to the rear bumper 102. The holder members 106a and 106b have a shape extending along the garnishes 104a and 104b, and the rigidity of the holder members 106a and 106b is higher than that of the rear bumper 102.

No. of Pages : 22 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/10/2021

(21) Application No.202114045243 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SERVER DEVICE, SYSTEM, CONTROL DEVICE, MOVING DEVICE, AND OPERATION METHOD FOR SYSTEM

(51) International classification	:G01C0021360000, G05D0001020000, H04L0029080000, G16H0040200000, G06F0003120000
(31) Priority Document No	:2020-170802
(32) Priority Date	:08/10/2020
(33) Name of priority country	:Japan
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)TOYOTA JIDOSHA KABUSHIKI KAISHA
Address of Applicant :1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571, Japan Japan
(72)**Name of Inventor :**
1)Makoto MATSUSHITA
2)Tomo SASAKI
3)Yui NAKAMURA
4)Satoshi KOMAMINE
5)Shuichi SAWADA
6)Tatsuya SUZUKI

(57) Abstract :
ABSTRACT SERVER DEVICE, SYSTEM, CONTROL DEVICE, MOVING DEVICE, AND OPERATION METHOD FOR SYSTEM The server device (11) includes a communication unit (23) and a control unit (21) that sends and receives information to and from another device via the communication unit (23). The control unit (21) generates, based on information on a route along which a moving device (12) is to move in a collective facility (13) and information indicating movement of a person in the collective facility (13), a waiting instruction for causing the moving device (12) to wait at a waiting place near an encounter position where the moving device (12) encounters the person on the route until the person passes the waiting place, and sends the waiting instruction to the moving device (12).

No. of Pages : 31 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2021

(21) Application No.202114045432 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A GEMSTONE AND A METHOD FOR MANUFACTURING THEREOF

(51) International classification	:A44C0017000000, C08F0220180000, F02B0003060000, F21S0043140000, B25J0009040000
(31) Priority Document No	:202011075103.6
(32) Priority Date	:09/10/2020
(33) Name of priority country	:China
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KAM, Cheuk Ying
Address of Applicant :6/F, 73 Waterloo Road, Kowloon, Hong Kong Hongkong(China)
(72)**Name of Inventor :**
1)KAM, Cheuk Ying

(57) Abstract :
The present invention relates to a gemstone comprising: a crown portion having a mesa and twelve diagonal cut surfaces; a pavilion portion having a bottom tip and twelve main facets; and a waist portion formed between the crown portion and the pavilion portion, wherein an inclination angle of the diagonal cut surfaces is set in a range of 33.5 DEG to 35.5 DEG relative to a horizontal plane, and an inclination angle of the main facets is set in a range of 41.5 DEG to 42.5 DEG relative to the horizontal plane. The gemstone is cut and polished according to the optical principle and the brightness of gemstone materials, has the advantages of full facet diamonds and single facet diamonds, and can emit brighter and clearer light.

No. of Pages : 19 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2021
(21) Application No.202114045453 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POWER STORAGE DEVICE

(51) International classification	:H01M0002100000, H01M0002160000, B60W0010260000, H01M0010625000, H01G0011780000
(31) Priority Document No	:2020-172016
(32) Priority Date	:12/10/2020
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KABUSHIKI KAISHA TOYOTA JIDOSHOKKI
Address of Applicant :2-1, Toyoda-cho, Kariya-shi, Aichi 448-8671, Japan Japan
2)TOYOTA JIDOSHA KABUSHIKI KAISHA
(72)**Name of Inventor :**
1)Ryuji OIDE
2)Hiromi UEDA
3)Satoshi MORIOKA
4)Motoyoshi OKUMURA

(57) Abstract :
A power storage device includes a power storage module, a pair of current collector plates configured to be stacked to interpose the power storage module in a first direction that is vertical, a pair of insulating plates configured to be stacked to interpose the power storage module and the pair of current collector plates in the first direction; and a pair of restraint plates configured to be stacked to interpose the power storage module, the pair of current collector plates, and the pair of insulating plates in the first direction. The power storage module is configured to include an accommodation space that accommodates an electrolytic solution together with a power generation element. A pressure adjustment valve communicating with the accommodation space is provided on a side surface of the power storage module. The insulating plate arranged on a lower side in the first direction with respect to the power storage module is configured to include a main body portion arranged between the current collector plate and the restraint plate, and a liquid receiving portion that is provided on an outer edge portion of the main body portion, is arranged at least at a position corresponding to the pressure adjustment valve when viewed from the first direction, and stores the electrolytic solution discharged from the power storage module. The main body portion and the liquid receiving portion are integrally formed.

No. of Pages : 44 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/10/2021

(21) Application No.202114045672 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ROAD FINISHING MACHINE AND METHOD FOR LEVELLING A SCREED

(51) International classification	:E01C0019480000, E01C0019400000, E04F0021240000, E01C0019420000, A61Q0005080000
(31) Priority Document No	:20200791.0
(32) Priority Date	:08/10/2020
(33) Name of priority country	:EPO
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)Joseph Vögele AG
Address of Applicant :Joseph-Vögele-Straße 1, 67067 Ludwigshafen/Rhein, Germany Germany
(72)**Name of Inventor :**
1)Ralf WEISER
2)Philipp STUMPF
3)Stefan SIMON

(57) Abstract :
The invention relates to a road finishing machine (1), comprising a screed (4) for producing a paving layer (2) on a subsoil (3) on which the road finishing machine (1) is moving in the laying direction (R) along a laying section, wherein the screed (4) is height-adjustable and has a pulling arm (5) which is fixed to the road finishing machine (1) at a front pulling point (6) formed thereon by means of a levelling cylinder (7), at least one measuring means (10) for performing a distance measurement, a storage means (16), a controlling system (17), and a closed-loop controller means (18) operatively linked thereto to adapt a setting of the levelling cylinder (7), wherein the controlling system (17) is embodied to calculate a correction value (K) in response to at least one distance measurement of the measuring means (10) performed with respect to the subsoil (3) and/or to a reference (11), which is performable at a measuring point (14) located in front of a front edge (9) of the screed (4) in the laying direction (R), to at least temporarily store the correction value (K) in the storage means (17) and calculate a desired levelling value (y1-Soll) for the measuring point (14) with a continued laying operation taking into consideration the stored correction value (K), on the basis of which the levelling cylinder (7) of the screed (4) is controlled when the front edge (9) of the screed (4) reaches the measuring point (14). Furthermore, the invention relates to a method for levelling a screed (4) of a road finishing machine (1).

No. of Pages : 22 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/10/2021

(21) Application No.202114045678 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ACTUATOR MECHANISM FOR AGRICULTURAL EXTRACTOR HOOD, EXTRACTOR FOR AGRICULTURAL MACHINES AND AGRICULTURAL HARVESTER

(51) International classification	:F24C0015200000, A01D0041120000, A01F0012440000, A01D0041140000, A01F0012460000
(31) Priority Document No	:BR 10 2020 020764 4
(32) Priority Date	:09/10/2020
(33) Name of priority country	:Brazil
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CNH Industrial Brazil Ltda.
Address of Applicant :Rua Senador Milton Campos, nº 175 - 8º andar – Parte, 34006-050 Nova Lima, Brazil Brazil
(72)**Name of Inventor :**
1)DAENIO CLEODOLPHI
2)JOO AUGUSTO MARCOLIN LUCCA
3)ALAN PATRICK DOS SANTOS
4)DANIEL ROHRER PEREIRA

(57) Abstract :
The present invention refers to a new actuator mechanism for extractors hood applied to agricultural machines, particularly intended for harvesting tall and stemmed plants, which was designed and developed to provide a practical and functional solution, but mainly for low-cost in terms of crop residues extraction during the harvesting process of these machines. More specifically, the actuator mechanism, according to the present invention, comprises an articulated arm (106) associated with a linear actuator (107), wherein said articulated arm (106) is composed of a first segment (106a) and a second segment (106b). The ends of the first segment (106a) are pivoted, on one side, in the structure of the cleaning chamber (100) of an extractor (54, 78) and, on the other side, close to one of the ends of the second segment (106b), which is pivoted on the hood (103) through its opposite end; and said linear actuator (107) is anchored to the mounting structure (104) of the cleaning chamber (100) of the extractor (54, 78), so that its movable arm (107a) is fixed together with the first segment (106a) of said articulated arm (106) through a pivot (108).

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2021
(21) Application No.202114046041 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR OPERATING A BATTERY SYSTEM AND BATTERY SYSTEM

(51) International classification	:H01M0010420000, H01M0010480000, H02J0007000000, H01M0010440000, H01M0010613000
(31) Priority Document No	:102020212837.5
(32) Priority Date	:12/10/2020
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ROBERT BOSCH GMBH
Address of Applicant :Postfach 30 02 20, 70442 Stuttgart, Germany Germany
(72)**Name of Inventor :**
1)SALZIGER, Jan

(57) Abstract :
The present subject matter relates to a method for operating a battery system (10). The battery system (10) comprises several interconnected batteries (12), each of which has at least one battery cell (16) and a battery management system (18) for monitoring and controlling the battery (12), wherein the individual batteries (12) are removable from the battery system (10). The method comprises the following procedural steps: - Detecting a movement of a battery (12) in a removal direction (24); and - Switching off the battery (12).

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/10/2021

(21) Application No.202114046049 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BEAMS TO MONITOR

(51) International classification	:H01S0005068300, H04B0007204000, A62C0031240000, A47B0021007000, G01S0001540000
(31) Priority Document No	:20205994
(32) Priority Date	:09/10/2020
(33) Name of priority country	:Finland
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)**Name of Applicant :**
1)NOKIA SOLUTIONS AND NETWORKS OY
Address of Applicant :Karakaari 7 02610 Espoo, Finland Finland
(72)**Name of Inventor :**
1)KAYA, Aliye
2)MATERNIA, Michal

(57) Abstract :
To configure a set of user devices, which comprises one or more user devices, to monitor a subset of beams, at least one past beam sequence indicating one or more beams, which served the set is determined, and inputted to a trained model which outputs a probability distribution. Then as many beams as is a number of beams determined for the set to monitor is selected from the probability distribution according to a first criteria, and the set of user devices is configured to monitor and report beams in the beam group. Past beam sequences are also used in training. From the past sequences, set-specifically, past beams that served a set within a first time interval are determined to be used as training data, and future beams that served the set within a second time interval following the first time interval are determined to be used as validation data.

No. of Pages : 35 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/11/2021

(21) Application No.202117052640 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : STRAIN SENSOR AND A STRAIN MEASURING ASSEMBLY COMPRISING THE SENSOR

(51) International classification	:G01L0001220000, G01B0007160000, G01L0009000000, G01L0001180000, A61M0015000000
(31) Priority Document No	:PV 2019-636
(32) Priority Date	:11/10/2019
(33) Name of priority country	:Czech Republic
(86) International Application No Filing Date	:PCT/CZ2020/050076 :08/10/2020
(87) International Publication No	:WO/2021/068998
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)4DOT MECHATRONIC SYSTEMS S.R.O.
Address of Applicant :Purkynova 649/127, Medlanky 61200 Brno Czech Republic
(72)**Name of Inventor :**
1)OTOUPALIK, Jan
2)BURIAN, Josef
3)KAPLAN, Tomas

(57) Abstract :
The invention is a strain sensor (1) and a strain measuring assembly comprising the sensor, which is particularly suitable for measuring strain in industrial applications. The strain sensor (1) comprises a sensor body (2) and at least one semiconductor strain gauge (3) comprising a strain gauge body and two conductive contacts of the strain gauge through which the semiconductor strain gauge (3) is attached to the sensor body (2). The sensor body (2) comprises a contact side for attachment to the measured surface and an outer side opposite the contact side. The contact side comprises a protuberant portion for contact with the measured surface and a recessed portion, on which the semiconductor strain gauge (3) is placed, wherein both conductive contacts of the strain gauge are brought to the outer side of the sensor body (2). The sensor body (2) can preferably be a printed circuit board provided on the contact side with recesses (4) for housing the strain gauges. To increase the resistance, the strain sensor (1) can for example be encapsulated by a covering material or provided with a metal case (10).

No. of Pages : 18 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054244 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PIPELINED-DATA-TRANSFORM-ENABLED DATA MOVER SYSTEM

(51) International classification	:G06F0016250000, H04L0009060000, G06F0013280000, G06F0016901000, G06F0012020000
(31) Priority Document No	:16/401913
(32) Priority Date	:02/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/030883 :30/04/2020
(87) International Publication No	:WO/2020/223575
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DELL PRODUCTS L.P.
Address of Applicant :One Dell Way Round Rock, Texas 78682 U.S.A.
(72)**Name of Inventor :**
1)IYER, Shyamkumar T.

(57) Abstract :
A pipelined-data-transform-enabled data mover system includes a data mover device coupled to a memory system. The data mover device reads initial data from memory location(s) included in the memory system, and include at least one first data mover element that performs at least one intermediate data transform operation on the initial data in order to produce intermediate data. The data mover device also includes at least one second data mover element that subsequently performs at least one final data transform operation on the intermediate data in order to produce final data. The data mover device then writes the final data to memory location(s) included in the memory system. The data mover device may be configured by a processing system via a single descriptor that configures the data mover device to perform multiple read operations from different memory locations in the memory system in order to read the initial data.

No. of Pages : 16 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054246 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR TRANSMITTING OR RECEIVING SIGNAL IN WIRELESS COMMUNICATION SYSTEM, AND DEVICE FOR SUPPORTING SAME

(51) International classification	:H04L0005000000, H04W0072040000, H04W0076280000, H04L0027260000, H04W0052020000
(31) Priority Document No	:10-2019-0051733
(32) Priority Date	:02/05/2019
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:PCT/KR2020/005905 :04/05/2020
(87) International Publication No	:WO/2020/222619
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LG ELECTRONICS INC.
Address of Applicant :128, Yeoui-daero Yeongdeungpo-gu Seoul 07336 Republic of Korea
(72)**Name of Inventor :**
1)CHA, Hyunsu
2)KO, Woosuk
3)KO, Hyunsoo
4)KIM, Kijun
5)YOON, Sukhyon

(57) Abstract :
According to an aspect of the present disclosure, a method of a user device in a wireless communication system comprises: receiving uplink reference signal (UL RS) configuration information; transmitting UL RS on a UL RS resource configured on the basis of the UL RS configuration information; and decoding a physical downlink shared channel (PDSCH) in a predetermined resource region, wherein: on the basis of the configuration of discontinuous reception (DRX), a physical downlink control channel (PDCCH) for the PDSCH is monitored within ON duration related to the DRX; the UL RS resource includes at least one resource element (RE); the at least one RE is configured as N-comb on a frequency domain; the start position of each of the at least one RE on the frequency domain is determined on the basis of a predetermined offset and a comb offset included in the UL RS configuration information; the predetermined offset is acquired on the basis of at least one orthogonal frequency division multiplexing (OFDM) symbol of the at least one RE and the N-comb; and the N is a natural number.

No. of Pages : 80 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054256 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INFORMATION PROCESSING DEVICE, INFORMATION PROCESSING METHOD, AND PROGRAM

(51) International classification	:G06K0009000000, H04N0005232000, H04N0007180000, G06T0007730000, G06F0003030000
(31) Priority Document No	:2019-121554
(32) Priority Date	:28/06/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/024249 :19/06/2020
(87) International Publication No	:WO/2020/262261
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SONY GROUP CORPORATION
Address of Applicant :1-7-1, Konan, Minato-ku, Tokyo 1080075 Japan
(72)**Name of Inventor :**
1)SUGANO, Hisako

(57) Abstract :
A subject feature detection unit (53) (detection unit) of a portable terminal (80) (information processing device) detects the line-of-sight direction (E) (feature) of a subject (92) displayed simultaneously with a 3D model (90M) in a captured image (I). A display control unit (54) (control unit) changes the line-of-sight direction (F) (display mode) of the 3D model (90M) in accordance with the line-of-sight direction (E) of the subject (92) detected by the subject feature detection unit (53) so that the 3D model (90M) faces a camera (84).

No. of Pages : 63 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054257 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HOT-STAMP-MOLDED ARTICLE

(51) International classification	:C22C0038000000, C22C0038060000, C22C0038040000, C22C0038020000, C22C0038160000
(31) Priority Document No	:2019-101987
(32) Priority Date	:31/05/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/021138 :28/05/2020
(87) International Publication No	:WO/2020/241763
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NIPPON STEEL CORPORATION
Address of Applicant :6-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 1008071 Japan
(72)**Name of Inventor :**
1)SAKIYAMA Yuji
2)TODA Yuri
3)HIKIDA Kazuo

(57) Abstract :
A hot-stamp-molded article according to the present invention comprises a base material steel sheet which has a specified chemical composition and a plating layer which is arranged on the surface of the base material steel sheet, is deposited in a deposition amount of 10 g/m2to 90 g/m2 inclusive and contains Ni at a content of 10% by mass to 25% by mass inclusive and a remainder made up by Zn and impurities, wherein a metallic structure in a surface layer region contains, in terms of % by area, 80.0% or more of martensite and 8.0% or more of retained austenite, and the Ni concentration in the surface layer region is 8% by mass or more.

No. of Pages : 48 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054258 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHANE RICH GAS UPGRADING TO METHANOL

(51) International classification	:C01B0003380000, C07C0029151000, B01J0019240000, C10G0003000000, C07C0029152000
(31) Priority Document No	:PA 2019 00735
(32) Priority Date	:18/06/2019
(33) Name of priority country	:Denmark
(86) International Application No Filing Date	:PCT/EP2020/065438 :04/06/2020
(87) International Publication No	:WO/2020/254116
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HALDOR TOPSØE A/S
Address of Applicant :Haldor Topsøes Allé 1 2800 Kgs. Lyngby Denmark
(72)**Name of Inventor :**
1)MORTENSEN, Peter Mølgaard
2)HANSEN, John Bøgild
3)AASBERG-PETERSEN, Kim
4)NIELSEN, Charlotte Stub

(57) Abstract :
The invention relates to a method for upgrading a hydrocarbon feed gas to methanol, comprising the steps of: - providing a hydrocarbon feed gas, - optionally, purifying the hydrocarbon feed gas in a gas purification unit, - optionally, prereforming the hydrocarbon feed gas together with a steam feedstock in a prereforming unit, - carrying out steam methane reforming in a reforming reactor heated by means of an electrical power source, - providing the synthesis gas to a methanol synthesis unit to provide a product comprising methanol and an off-gas. Then invention also relates to a system for upgrading a hydrocarbon feed gas to methanol.

No. of Pages : 25 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054259 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PROCESS FOR THE FACILE ELECTROSYNTHESIS OF GRAPHENE FROM CO2

(51) International classification	:B82Y0040000000, B82Y0030000000, C25B0001000000, C01B0032184000, C01B0032190000
(31) Priority Document No	:62/853473
(32) Priority Date	:28/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/034945 :28/05/2020
(87) International Publication No	:WO/2020/243320
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)C2CNT LLC
Address of Applicant :625 West Venice Avenue Venice, FL 34285 U.S.A.
(72)**Name of Inventor :**
1)LICHT, Stuart

(57) Abstract :
The present invention relates to the production of graphene from CO2 through electrolysis and exfoliation processes. One embodiment is a method for producing graphene comprising (i) performing electrolysis between an electrolysis anode and an electrolysis cathode in a molten carbonate electrolyte to generate carbon nanomaterial on the cathode, and (ii) electrochemically exfoliating the carbon nanomaterial from a second anode to produce graphene. The exfoliating step produces graphene in high yield than thicker, conventional graphite exfoliation reactions. CO2 can be the sole reactant used to produce the valuable product as graphene. This can incentivize utilization of CO2, and unlike alternative products made from CO2 such as carbon monoxide or other fuels such as methane, use of the graphene product does not release this greenhouse gas back into the atmosphere.

No. of Pages : 34 No. of Claims : 48

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054267 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LIGHT-EMITTING ELEMENT FOR DISPLAY, AND DISPLAY DEVICE HAVING SAME

(51) International classification	:H01L0033380000, H01L0033620000, H01L0027150000, H01L0033100000, H01L0021823400
(31) Priority Document No	:62/850674
(32) Priority Date	:21/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/KR2020/006348 :14/05/2020
(87) International Publication No	:WO/2020/235857
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SEOUL VIOSYS CO., LTD.
Address of Applicant :65-16, Sandan-ro 163beon-gil, Danwon-gu, Ansan-si, Gyeonggi-do 15429 Republic of Korea
(72)**Name of Inventor :**
1)LEE, Seom Geun
2)JANG, Seong Kyu
3)SHIN, Chan Seob
4)LEE, Ho Joon

(57) Abstract :
A light-emitting element for a display, according to one embodiment, comprises: a first LED stack; a second LED stack positioned below the first LED stack; a third LED stack positioned below the second LED stack; a first bonding layer interposed between the second LED stack and the third LED stack; a second bonding layer interposed between the first LED stack and the second LED stack; a lower insulation layer interposed between the second bonding layer and the second LED stack; first lower buried layers electrically connected to a first conductive semiconductor layer and a second conductive semiconductor layer, respectively, of the third LED stack by penetrating the lower insulation layer and the second LED stack; first upper buried layers electrically connected to the first lower buried layers by penetrating the first LED stack and the second bonding layer; and a plurality of upper connectors arranged on the first LED stack, wherein the upper connectors include upper connectors electrically connected to the first upper buried layers by covering the first upper buried layers.

No. of Pages : 40 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054270 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ALPHA-SYNUCLEIN ASSAYS

(51) International classification	:G01N0033680000, C07K0014470000, C07K0016180000, B01D0065020000, G01N0033537000
(31) Priority Document No	:62/841118
(32) Priority Date	:30/04/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/030796 :30/04/2020
(87) International Publication No	:WO/2020/223523
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CHASE THERAPEUTICS CORPORATION
Address of Applicant :1825 K Street NW, Suite 520 Washington, DC 20006 U.S.A.
(72)**Name of Inventor :**
1)CHASE, Thomas N.
2)CLARENCE-SMITH, Kathleen

(57) Abstract :
An assay for alpha synuclein and its various forms includes: a) providing a blood sample from a subject; b) isolating central nervous system (CNS) derived exosomes from the blood sample; c) removing proteins from the surface of the isolated exosomes to produce scrubbed exosomes; d) isolating the internal contents of the scrubbed exosomes; e) determining, in the isolated internal contents, a quantitative measure of oligomeric a-synuclein protein and, optionally, one or a plurality of protein forms selected from: monomeric a-synuclein, phosphorylated a-synuclein, monomeric tau, oligomeric tau, phosphorylated tau, amyloid beta (a-beta) 1-40, amyloid beta 1-42, and oligomeric amyloid beta; f) separating species of oligomeric a-synuclein into a plurality of fractions; g) determining a quantitative measure of each of one or a plurality of the separated oligomeric a-synuclein species and, optionally, one or a plurality of species selected from: monomeric a-synuclein, tau-synuclein co-polymers, amyloid beta-synuclein co-polymers and tau-amyloid beta-synuclein co-polymers.

No. of Pages : 63 No. of Claims : 42

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054272 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NANOSTRUCTURES COMPRISING COBALT PORPHYRIN-PHOSPHOLIPID CONJUGATES AND POLYHISTIDINE-TAGS

(51) International classification	:C07K0014795000, A61K0009127000, A61K0038410000, A61K0047690000, A61K0038160000
(31) Priority Document No	:16/399581
(32) Priority Date	:30/04/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/030537 :29/04/2020
(87) International Publication No	:WO/2020/223395
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)THE RESEARCH FOUNDATION FOR THE STATE UNIVERSITY OF NEW YORK
Address of Applicant :Technology Transfer, University At Buffalo UB Commons 520 Lee Entrance, Suite 109 Buffalo, NY 14228-2567 U.S.A.
2)PATH
(72)**Name of Inventor :**
1)LOVELL, Jonathan
2)SHAO, Shuai
3)GENG, Jumin
4)HUANG, Wei-Chiao
5)LEE, Shwu-Maan
6)KING, Charles, Richter

(57) Abstract :
The present disclosure provides nanostructures (e.g., monolayer or bilayer nanostructures) comprising porphyrins with cobalt chelated thereto such that the cobalt metal resides within monolayer or bilayer in the porphyrin macrocycle. The nanostructures can have presentation molecules comprising epitopes from microorganisms with a histidine tag attached thereto, such that at least a part of the his-tag is within the monolayer or bilayer and coordinated to the cobalt metal core and the presentation molecules are exposed to the outside of the nanostructures. The nanostructures can further comprise a cargo. The nanostructures can be used to deliver the cargo to an individual.

No. of Pages : 46 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054278 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENERGY STORAGE DEVICE AND METHOD FOR STORING ENERGY

(51) International classification	:F28D0020000000, F28D0020020000, H05B0001020000, F02C0006160000, H05B0003340000
(31) Priority Document No	:19180472.3
(32) Priority Date	:17/06/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/057977 :23/03/2020
(87) International Publication No	:WO/2020/254001
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)E2S POWER AG
Address of Applicant :Haslenstrasse 4 8832 Wilen b. Wollerau Switzerland
(72)**Name of Inventor :**
1)SAVIC, Sasha
2)VASSILIEV, Vladimir
3)CUSKELLY, Dylan
4)PANCHESHNYI, Sergey
5)KISI, Erich Herold

(57) Abstract :
An energy storage device is provided with at least one energy storage unit (1). The energy storage unit (1) comprises a thermal storage element (3) made of a solid material and an electrical heating device (5) for heating the thermal storage element (3). According to a first concept, the electrical heating device (5) is adapted to heat the thermal storage element (3) by means of generating an electric current within the material of the thermal storage element (3). According to a second concept, an electric gas insulation (8) is provided, in order to electrically insulate the electrical heating device (5) from the thermal storage element (3). Furthermore, a method for storing energy by means of such an energy storage device is provided.

No. of Pages : 35 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054279 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MANAGING OUTAGE DETECTIONS AND REPORTING

(51) International classification	:H04W0040240000, H04W0084180000, H04L0012240000, H04W0004900000, H04L0012260000
(31) Priority Document No	:62/854553
(32) Priority Date	:30/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/035256 :29/05/2020
(87) International Publication No	:WO/2020/243525
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LANDIS+GYR INNOVATIONS, INC.
Address of Applicant :30000 Mill Creek Avenue Suite 100 Alpharetta, Georgia 30022 U.S.A.
(72)**Name of Inventor :**
1)CARDOZO, Ruben E. Salazar
2)TURNER, James Randall

(57) Abstract :
Systems and methods are disclosed for detecting node outages in a mesh network. A tracking node in the mesh network detects a set of signals originating from a tracked node in the mesh network. The set of signals includes beacons or communication messages transmitted by the tracked node. The tracking node determines that a threshold number of the beacon intervals have passed since receiving the most recent signal from the tracked node. The tracking node performs outage validation based on data received from another node in the mesh network and updates the status of the tracked node. Based on the updated status, the tracking node outputs a ping to the tracked node requesting a response to the ping. When the response to the ping is not received from the tracked node, the tracking node transmits an outage alarm message to a next topologically higher layer of the mesh network.

No. of Pages : 29 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054280 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PENETRATING OIL AND METHOD FOR PRODUCING THE SAME

(51) International classification	:A61Q0001020000, C11B0003000000, C10L0001040000, A61K0031685000, C10G0001000000
(31) Priority Document No	:20195523
(32) Priority Date	:14/06/2019
(33) Name of priority country	:Finland
(86) International Application No Filing Date	:PCT/FI2019/050823 :18/11/2019
(87) International Publication No	:WO/2020/249846
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NESTE OYJ
Address of Applicant :Keilaranta 21 02150 Espoo Finland
(72)**Name of Inventor :**
1)HARTIKAINEN, Jukka
2)KARTTUNEN, Jouni
3)RÄMÖ, Virpi
4)VIRTANEN, Jorma

(57) Abstract :
A penetrating oil comprising isoalkane solvent and oil derived from biological sources and a method for producing the same are disclosed. Use of a composition comprising isoalkane solvent and oil derived from biological sources is further disclosed.

No. of Pages : 36 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054281 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MULTIPROCESSOR UTILITY METER FEATURING A METROLOGY PROCESSOR COUPLED TO AN APPLICATION PROCESSOR

(51) International classification	:G01D0004000000, H04Q0009000000, G01R0022060000, G01R0022100000, G01D0004020000
(31) Priority Document No	:62/855080
(32) Priority Date	:31/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/035332 :29/05/2020
(87) International Publication No	:WO/2020/243577
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LANDIS+GYR INNOVATIONS, INC.
Address of Applicant :30000 Mill Creek Avenue Suite 100 Alpharetta, Georgia 30022 U.S.A.
(72)**Name of Inventor :**
1)TORPY, Keith
2)KARLGAARD, Matt
3)DECKER, David
4)TURNER, James Randall

(57) Abstract :
A utility meter has a multiprocessor architecture including (i) a microprocessing unit (MPU) for executing multiple software applications and (ii) another processing unit for performing core metrology functions in real time. For instance, the utility meter includes a metrology engine, an MPU, and one or more metrology applications. The metrology engine measures consumption of a resource and generates consumption data based on the consumption of the resource. The metrology engine includes a metrology processor, a dedicated memory, and a real-time operating system run by the metrology processor to enable the metrology engine to run time-critical metrology functions in real time. The MPU is coupled to the metrology processor and includes one or more processor cores. The MPU runs the one or more metrology applications over a primary operating system of the MPU, and the one or more metrology applications utilize the consumption data.

No. of Pages : 21 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054282 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SOLID FORMS OF {6-[(2-AMINO-3-CHLOROPYRIDIN-4-YL)SULFANYL]-3-[(3S,4S)-4-AMINO-3-METHYL-2-OXA-8-AZASPIRO[4.5]DECAN-8-YL]-5-METHYLPYRAZIN-2-YL}METHANOL, AN SHP2 INHIBITOR

(51) International classification	:C07D0217260000, A61K0031470000, C07D0233640000, A61K0045060000, C07D0407120000
(31) Priority Document No	:62/858837
(32) Priority Date	:07/06/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/036137 :04/06/2020
(87) International Publication No	:WO/2020/247643
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)REVOLUTION MEDICINES, INC.
Address of Applicant :700 Saginaw Drive Redwood City, California 94063 U.S.A.
(72)**Name of Inventor :**
1)LI, Shaoling
2)BALLMER, Steven G.

(57) Abstract :
The present disclosure relates to crystalline solid forms of {6-[(2-amino-3-chloropyridin-4- yl)sulfanyl]-3-[(3,S,4S)-4-amino-3-methyl-2-oxa-8-azaspiro[4.5]decan-8-yl]- 5-methylpyrazin-2-yl}methanol, or a pharmaceutically acceptable salt thereof, the process of preparing the forms, and pharmaceutical compositions and methods of use thereof.

No. of Pages : 46 No. of Claims : 43

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054283 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SELECTIVE SSB RECEPTION FOR USER EQUIPMENT (UE) RECEIVER TUNING

(51) International classification	:H04L0005000000, H04B0007060000, H04W0024020000, H04W0052020000, H04W0072040000
(31) Priority Document No	:62/842257
(32) Priority Date	:02/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/EP2020/061678 :28/04/2020
(87) International Publication No	:WO/2020/221711
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)
Address of Applicant :164 83 Stockholm Sweden
(72)**Name of Inventor :**
1)ZOU, Gang
2)MALEKI, Sina
3)SHUBHI, Ilmiawan
4)REIAL, Andres

(57) Abstract :
A user equipment (UE) is configured to calibrate a receiver during operation in a wireless network. The UE comprises a radio transceiver configured to communicate with the wireless network; and processing circuitry operatively associated with the radio transceiver. The transceiver is arranged to receive a first reference signal associated with a first reception condition, receive a second reference signal associated with a second reception condition, and then either receive a third reference signal, when the processing circuitry determines that the conditions of the first and second reception conditions differ above a first threshold, and receive a message with receiver settings based on reception conditions of the third reference signal, or receive the message with a receiver setting based on receiver conditions of any one of the first and the second reference signals, when the processing circuitry determines that the conditions of the first and second reception conditions differ below the first threshold, enabling omitting reception of the third reference signal. A method and computer program are also disclosed.

No. of Pages : 39 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054287 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ELECTRONIC DEVICE INCLUDING DISPLAY

(51) International classification	:H04M0001020000, H01L0051000000, G06F0001160000, E05D0011100000, G09F0009300000
(31) Priority Document No	:10-2019-0052458
(32) Priority Date	:03/05/2019
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:PCT/KR2020/005600 :28/04/2020
(87) International Publication No	:WO/2020/226326
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAMSUNG ELECTRONICS CO., LTD.
Address of Applicant :129, Samsung-ro, Yeongtong-gu Suwon-si Gyeonggi-do 16677 Republic of Korea
(72)**Name of Inventor :**
1)KIM, Dooryong
2)KIM, Yunsik
3)CHO, Jaemyung
4)KIM, Jingook
5)JANG, Yonghee
6)PARK, Sinyoung

(57) Abstract :
An electronic device is provided. The electronic device includes a hinge housing extending in a direction of a rotational axis, a first housing connected to one side of the hinge housing in a direction perpendicular to the rotational axis to rotate about the rotational axis relative to the hinge housing, a second housing connected to an opposite side of the hinge housing in a direction perpendicular to the rotational axis to rotate about the rotational axis relative to the hinge housing, and a flexible display including a bending area at least partially disposed in the hinge housing and formed to be a flat surface or a curved surface, a first area extending from the bending area in one direction perpendicular to the rotational axis, and a second area extending from the bending area in an opposite direction perpendicular to the rotational axis.

No. of Pages : 33 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054288 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WALL STRUCTURE

(51) International classification	:E04B0001800000, B05C0011020000, B32B0005180000, H01H0033666000, B32B0027300000
(31) Priority Document No	:2019-103351
(32) Priority Date	:31/05/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/012924 :24/03/2020
(87) International Publication No	:WO/2020/241012
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD.
Address of Applicant :1-61, Shiromi 2-chome, Chuo-ku, Osaka-shi, Osaka 5406207 Japan
(72)**Name of Inventor :**
1)HASEGAWA, Takashi
2)HEW, Zhixin
3)YAMAGUCHI, Shigeyuki

(57) Abstract :
This disclosure proposes a wall structure comprising an insulation board containing a vacuum insulation material such that degradation of heat insulation properties can be prevented. The wall structure (1) comprises: a plate (2); an insulation board (4) that is disposed on one side of the plate (2) in the thickness direction and that contains a vacuum insulation material (3); a base material (5) that is disposed to the side of the insulation board (4) opposite to the plate (2); and a support member (6) that supports the base material (5) in a location away from the insulation board (4).

No. of Pages : 22 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054295 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BAR-IN-COIL WINDING METHOD

(51) International classification	:B21C0047140000, H02K0003280000, H01F0041082000, H02K0015080000, B21C0047040000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/JP2019/022387 :05/06/2019
(87) International Publication No	:WO/2020/245953
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)JFE STEEL CORPORATION
Address of Applicant :2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo 1000011 Japan
(72)**Name of Inventor :**
1)KOBASHI Koji
2)NAKAMURA Hiroyuki
3)OOTANI Yoshinori

(57) Abstract :
The objective of the present invention is to provide a bar-in-coil winding method with which a coil height can be reduced. In this bar-in-coil winding method for manufacturing a bar-in-coil by causing a bobbin extending in a vertical direction to rotate, and winding the wire rod while layering the winding wire rod from a lower side of the bobbin to an upper side thereof: the rotational speed of the bobbin is increased and decreased with a fixed period; the wire rod is wound at least one turn on the bobbin at a first rotational speed V1 represented by formula (3), including a lowest rotational speed Vmin, being the lowest rotational speed during one period in which the rotational speed is varied; and the wire rod is wound at least one turn on the bobbin at a second rotational speed V2 represented by formula (4), including a highest rotational speed Vmax, being the highest rotational speed during one period in which the rotational speed is varied. (3) ... Vmin=V1=Vmin+0.1×VW, (4) ... Vmax-0.1×VW=V2=Vmax

No. of Pages : 21 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054296 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMBINATION THERAPIES COMPRISING APREMILAST AND TYK2 INHIBITORS

(51) International classification	:C07D0209480000, A61K0031403500, C07D0405140000, A61K0047380000, C07D0401140000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/US2019/029772 :30/04/2019
(87) International Publication No	:WO/2020/222773
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CELGENE CORPORATION
Address of Applicant :86 Morris Avenue Summit, NJ 07901 U.S.A.
(72)**Name of Inventor :**
1)SCHAFER, Peter Henry
2)PLENGE, Robert
3)ADAMS, Mary
4)BEEBE, Lisa
5)BUCHWALTER, Gilles
6)CARR, Tiffany
7)TZENG, Te-Chen

(57) Abstract :
Provided herein are methods of treating diseases and disorder responsive to the inhibition of PDE4 comprising administering apremilast and a Tyk2 inhibitor to a subject. Also provided herein are pharmaceutical compositions comprising apremilast and a Tyk2 inhibitor.

No. of Pages : 44 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054297 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMBINATION THERAPIES COMPRISING APREMILAST AND TYK2 INHIBITORS

(51) International classification	:C07D0209480000, A61K0031403500, C07D0405140000, A61K0047380000, C07D0401140000
(31) Priority Document No	:PCT/US2019/029772
(32) Priority Date	:30/04/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/030608 :30/04/2020
(87) International Publication No	:WO/2020/223431
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CELGENE CORPORATION
Address of Applicant :86 Morris Avenue Summit, NJ 07901 U.S.A.
(72)**Name of Inventor :**
1)SCHAFER, Peter Henry
2)PLENGE, Robert
3)ADAMS, Mary
4)BEEBE, Lisa
5)BUCHWALTER, Gilles
6)CARR, Tiffany
7)TZENG, Te-Chen

(57) Abstract :
Provided herein are methods of treating diseases and disorder responsive to the inhibition of PDE4 comprising administering apremilast and a Tyk2 inhibitor to a subject. Also provided herein are pharmaceutical compositions comprising apremilast and a Tyk2 inhibitor.

No. of Pages : 46 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054306 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMPOSITION AND METHOD FOR SPRAY DRYING AN ADJUVANT VACCINE EMULSION

(51) International classification	:A61K0039000000, A61K0039390000, A61K0009000000, A61K0039040000, A61K0009160000
(31) Priority Document No	:62/852983
(32) Priority Date	:25/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/034595 :26/05/2020
(87) International Publication No	:WO/2020/243115
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)INFECTIOUS DISEASE RESEARCH INSTITUTE
Address of Applicant :1616 EASTLAKE AVENUE EAST SUITE 400 Seattle, Washington 98102 U.S.A.
(72)**Name of Inventor :**
1)KRAMER, Ryan
2)ARCHER, Michelle
3)FOX, Christopher
4)VEHRING, Reinhard
5)ORDOUBADI, Mani
6)GOMEZ, Melissa
7)CARRIGY, Nicholas

(57) Abstract :
The invention provides for thermostable spray dried formulations including vaccines and pharmaceutical compositions for inducing or enhancing an immune response and methods of use thereof. The spray dried formulations are a dry powder generally comprising an antigen and/or an adjuvant, a metabolizable oil, and one or more excipients.

No. of Pages : 95 No. of Claims : 40

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054310 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PREDICTION MODE DECODING METHOD AND APPARATUS AND PREDICTION MODE ENCODING METHOD AND APPARATUS

(51) International classification	:H04N0019176000, H04N0019593000, H04N0019110000, H04N0019159000, H04N0019700000
(31) Priority Document No	:201910544430.2
(32) Priority Date	:21/06/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/097177 :19/06/2020
(87) International Publication No	:WO/2020/253841
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HANGZHOU HIKVISION DIGITAL TECHNOLOGY CO., LTD.
Address of Applicant :No.555 Qianmo Road Binjiang District Hangzhou, Zhejiang 310051 China
(72)**Name of Inventor :**
1)CHEN, Fangdong

(57) Abstract :
Disclosed are a prediction mode decoding method and apparatus and a prediction mode encoding method and apparatus, belonging to the technical field of multimedia. When which prediction mode is enabled by the current block is determined, for the current candidate prediction mode, enable conditions of prediction modes to be traversed are acquired, wherein the prediction modes to be traversed comprise at least one candidate prediction mode, other than the current candidate prediction mode, used for predicting the current block. Then, according to the enable conditions of the prediction modes to be traversed, whether to decode indication information of the current candidate prediction mode can be determined. If none of the prediction modes to be traversed can be enabled, the step of decoding the indication information can be skipped, and it is directly determined that the current block enables the current candidate prediction mode. Determining whether the current block enables the current candidate prediction mode, only by decoding the indication information of the current candidate prediction mode as in the related art, is not necessary, thereby simplifying the flow of decoding a prediction mode and improving the efficiency of decoding the prediction mode.

No. of Pages : 47 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054311 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SPRINKLER NOZZLE

(51) International classification	:B05B0001340000, B01F0005060000, A62C0031020000, F16K0003260000, F01N0003360000
(31) Priority Document No	:PA201900689
(32) Priority Date	:06/06/2019
(33) Name of priority country	:Denmark
(86) International Application No Filing Date	:PCT/EP2020/063816 :18/05/2020
(87) International Publication No	:WO/2020/244913
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DANFOSS FIRE SAFETY A/S
Address of Applicant :Middelfartvej 9A 5000 Odense Denmark
(72)**Name of Inventor :**
1)WINDT, Carsten
2)JENSEN, Lars Wrang
3)BYGBJERG, Henrik

(57) Abstract :
The invention relates to a device (10) for providing mist to a surrounding environment, the device (10) comprising a housing unit (12) having an inlet opening (18), an outlet opening (20), and a chamber (22) extending between the inlet opening (18) and the outlet opening (20) along a central axis (24); a nozzle unit (14) comprising at least one orifice (26); wherein the nozzle unit (14) is arranged in the chamber (22), the nozzle unit (14) being slidable along the central axis (24) between a closing position, in which the nozzle unit (14) closes the outlet opening (20), and an opening position, in which the at least one orifice (26) connects the chamber (22) to the surrounding environment in fluid communication; wherein the nozzle unit (14) transfers from the closing position to the opening position if a fluid pressure at the inlet opening (18) exceeds a predefined threshold; wherein the nozzle unit (14) comprises a deflector part (28) for deflecting fluid in the opening position and for closing the outlet opening (20) in the closing position, wherein the at least one orifice (26) is arranged offset to the central axis (24) between the inlet opening (18) and the deflector part (28); wherein the at least one orifice (26) is configured to guide fluid flowing through the at least one orifice (26) and to lead the fluid towards the deflector part (28). The invention provides an improved device (10) for providing mist to a surrounding environment, which reduces the required amount of fluid and increases the efficiency of the fluid distribution.

No. of Pages : 13 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054312 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VALVE PLATE FOR FLUID PUMP

(51) International classification	:G02B0006380000, H01M0004700000, A61F0002280000, H01L0023480000, F01D0011020000
(31) Priority Document No	:201911025337
(32) Priority Date	:26/06/2019
(33) Name of priority country	:India
(86) International Application No Filing Date	:PCT/EP2020/025303 :26/06/2020
(87) International Publication No	:WO/2020/259869
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DANFOSS POWER SOLUTIONS II TECHNOLOGY A/S
Address of Applicant :Nordborgvej 81 6430 Nordborg Denmark
(72)**Name of Inventor :**
1)RAKTIM, Kashyap Suraj
2)SHIVANK, Ghambir
3)SIDRAM, Salutagi Shivayogi
4)NITIN, Hande

(57) Abstract :
A valve plate for a fluid pump includes a body having a first surface and an oppositely disposed second surface. The body defines a first kidney slot that extends through the first and second surfaces and a second kidney slot that extends through the first and second surfaces. A first notch is disposed in the first surface of the body and extends outwardly from the first kidney slot in a direction toward the second kidney slot. A second notch is disposed in the first surface and extends outwardly from the first kidney slot in a direction toward the second kidney slot. The second notch is separated from the first notch.

No. of Pages : 9 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054313 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ANTIBODIES AGAINST DISEASE CAUSING AGENTS OF POULTRY AND USES THEREOF

(51) International classification	:C12N0015850000, A23K0020195000, C07K0016080000, A61K0039000000, C07K0016440000
(31) Priority Document No	:62/850386
(32) Priority Date	:20/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/IB2020/000380 :19/05/2020
(87) International Publication No	:WO/2020/234642
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NOVOBIND LIVESTOCK THERAPEUTICS INC.
Address of Applicant :1021 West Hasting Street, 9th Floor Vancouver, British Columbia V6E 0C3 Canada
(72)**Name of Inventor :**
1)ABNOUSI, Hamlet
2)LOUTET, Slade
3)VAN PETEGEM, Filip
4)CHEUNG, Tsz, Ying Sylvia

(57) Abstract :
Described herein are methods and antibodies useful for reducing, eliminating, or preventing infection with a parasite population in an animal. Also described herein are antigens useful for targeting by heavy chain antibodies and VHH fragments for reducing a parasite population in an animal.

No. of Pages : 34 No. of Claims : 37

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054315 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RECOMBINANT AD35 VECTORS AND RELATED GENE THERAPY IMPROVEMENTS

(51) International classification	:C12N0015860000, A61K0048000000, C12N0007000000, C12N0015100000, A61K0009000000
(31) Priority Document No	:62/869907
(32) Priority Date	:02/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/040756 :02/07/2020
(87) International Publication No	:WO/2021/003432
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FRED HUTCHINSON CANCER RESEARCH CENTER
Address of Applicant :1100 Fairview Avenue North Seattle, Washington 98109 U.S.A.
2)UNIVERSITY OF WASHINGTON
(72)**Name of Inventor :**
1)KIEM, Hans-Peter
2)LIEBER, Andre
3)LI, Chang
4)WANG, Hongjie

(57) Abstract :
The present disclosure provides, among other things, helper-dependent adenoviral serotype 35 (Ad35) vectors. In various embodiments, helper-dependent Ad35 vectors can be used to deliver a therapeutic payload to a subject in need thereof. Exemplary payloads can encode replacement proteins, antibodies, CARs, TCRs, small RNAs, and genome editing systems. In certain embodiments, a helper-dependent Ad35 vector is engineered for integration of a payload into a host cell genome. The present disclosure further includes methods of gene therapy that include administration of a helper-dependent Ad35 vector to a subject in need thereof.

No. of Pages : 306 No. of Claims : 58

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054335 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENDOSCOPE AND OPERATION ARM

(51) International classification	:A61B0017000000, A61B0034000000, A61B0017160000, A61B0034370000, A61B0017290000
(31) Priority Document No	:201910338326.8
(32) Priority Date	:25/04/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/086605 :24/04/2020
(87) International Publication No	:WO/2020/216317
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SHENZHEN JINGFENG MEDICAL TECHNOLOGY CO., LTD.
Address of Applicant :TIAN, Tian Rm. 301, 39 Block Shenzhen Universiade Software Town, No. 8288 Longgang Avenue, He'ao Community, Yuanshan Street, Longgang District Shenzhen, Guangdong 518000 China
(72)**Name of Inventor :**
1)WANG, Jianchen
2)GAO, Yuanqian
3)XU, Guiyin
4)LI, You
5)YAO, Xuefeng

(57) Abstract :
A surgical instrument, comprising: a tail end instrument, a connecting component, and a tail end drive portion, wherein the connecting component comprises a plurality of connecting units connected in sequence; the tail end instrument is connected to the connecting unit; the tail end drive portion comprises a soft rod and a drive wire; the drive wire passes through the soft rod and is connected to the tail end instrument; the soft rod passes through the connecting component; at least one end portion thereof is a free end. The arrangement of the soft rod can reduce the friction during drive, prolong the service life of the drive wire, and improve the drive accuracy.

No. of Pages : 29 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054336 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PRIMERS AND ASSAYS FOR LINKING REGIONS USING POLYMERASES

(51) International classification	:C12Q0001685300, C12Q0001685800, C12Q0001682700, B82Y0010000000, G06F0016738000
(31) Priority Document No	:62/846149
(32) Priority Date	:10/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/CN2020/089560 :11/05/2020
(87) International Publication No	:WO/2020/228664
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)THE CHINESE UNIVERSITY OF HONG KONG
Address of Applicant :C/o Office Of Research And Knowledge Transfer Services, Room 301, Pi Ch'iu Building Shatin, New Territories Hong Kong China
(72)**Name of Inventor :**
1)CHAN, Kwan Chee
2)GAI, Wanxia
3)LO, Yuk-Ming Dennis

(57) Abstract :
Particular forward and reverse primers may be used to link distant regions of the same large DNA molecule into a smaller DNA molecule. A reverse primer R1 can have a first portion complementary to an ending sequence of region A and can have a second portion having an overlapping sequence. A forward primer F2 can have a first portion complementary to a starting sequence of region B, where the forward primer includes a complementary overlapping sequence (e.g., the same first portion or a second portion) that is complementary to the overlapping sequence. The first portion of F2 may be the entire primer. The smaller DNA molecules can be used to determine haplotypes of regions. Kits including the particular forward and reverse primers are also described.

No. of Pages : 57 No. of Claims : 43

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054337 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BALLOON CATHETER

(51) International classification	:A61M0025100000, A61M0025000000, B60C0013020000, F02M0035100000, H04N0013310000
(31) Priority Document No	:2019-115743
(32) Priority Date	:21/06/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/023416 :15/06/2020
(87) International Publication No	:WO/2020/255923
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GOODMAN CO., LTD.
Address of Applicant :5th Floor, KDX Nagoya Sakae Building, 4-5-3 Sakae, Naka-ku, Nagoya-shi, Aichi 4600008 Japan
(72)**Name of Inventor :**
1)OKAMOTO, Mitsumasa
2)OTA, Mitsuhiro
3)FUJISAWA, Soichiro
4)OHARA, Masahiko
5)HORIBA, Keitaro
6)KUNISADA, Takashi

(57) Abstract :
Provided is a balloon catheter 10 comprising, at a tip side thereof, a balloon 13 which can expand and contract. Linear parts 30 which extend linearly along an axial direction of the balloon 13 are provided to an outer surface of the balloon 13. The plurality of linear parts 30 are provided at a prescribed interval along a circumferential direction of the balloon 13. A cutout part 31 is formed in each linear part 30 at a middle position along the length direction thereof. The cutout parts 31 are respectively formed at positions which evenly divide the length of the linear parts 30.

No. of Pages : 30 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021
(21) Application No.202117054341 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SHIELDING STRUCTURES IN PLASMA ENVIRONMENT

(51) International classification	:H05K0001160000, G21B0001050000, H05H0001140000, H01J0037320000, H01M0002200000
(31) Priority Document No	:16/509286
(32) Priority Date	:11/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/040069 :29/06/2020
(87) International Publication No	:WO/2021/007058
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LOCKHEED MARTIN CORPORATION
Address of Applicant :6801 Rockledge Drive Bethesda, MD 20817 U.S.A.
(72)**Name of Inventor :**
1)HEINRICH, Jonathon, Robert
2)GARRETT, Michael, Lane
3)MCGUIRE, Thomas, John
4)FONT, Gabriel, Ivan

(57) Abstract :
A plasma confinement system includes an enclosure, one or more internal magnetic coils suspended within the enclosure in a plasma region, and one or more supports configured to support the one or more internal magnetic coils suspended within the enclosure. Each support of the one or more supports includes a first end and a second end opposite the first end. The first end is coupled to an interior portion of the enclosure and the second end is coupled to a component disposed within the plasma region. Each support further includes electrical conducting material disposed between the first end and the second end. The electrical conducting material is configured to, when supplied with one or more electrical currents, generate a magnetic field having a magnetic field gradient that varies along the support from the first end to the second end.

No. of Pages : 26 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/11/2021

(21) Application No.202117054351 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GENE FOR PARTHENOGENESIS

(51) International classification	:A61K0036288000, C12Q0001689500, C12N0015820000, C12Q0001680000, C12N0015113000
(31) Priority Document No	:19177252.4
(32) Priority Date	:29/05/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/064991 :29/05/2020
(87) International Publication No	:WO/2020/239984
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KEYGENE N.V.
Address of Applicant :P.O. Box 216 6700 AE Wageningen Netherlands
(72)**Name of Inventor :**
1)UNDERWOOD, Charles Joseph
2)RIGOLA, Diana
3)VAN DIJK, Peter Johannes
4)OP DEN CAMP, Rik Hubertus Martinus
5)SCHRANZ, Michael, Eric
6)VIJVERBERG, Catharina, Adriana

(57) Abstract :
The invention provides the nucleotide sequence and amino acid sequences of the parthenogenesis gene of Taraxacum as well as (functional) homologues, fragments and variants thereof, which provides parthenogenesis as a part of apomixis. Also parthenogenetic plants and methods for making these are provided, as are molecular markers and methods of using these.

No. of Pages : 56 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054391 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CHEMICAL COMPOSITION FOR SEED TREATMENT

(51) International classification	:A01C0001060000, A01C0001000000, A01N0063000000, A01C0001080000, B01J0023882000
(31) Priority Document No	:1908025.8
(32) Priority Date	:05/06/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051347 :04/06/2020
(87) International Publication No	:WO/2020/245586
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)YARA UK LIMITED
Address of Applicant :Harvest House Origin Way Europarc Grimsby DN37 9TZ U.K.
(72)**Name of Inventor :**
1)WARD, Stuart
2)BROWN, Jonathan
3)QUIGNON, Caroline

(57) Abstract :
A liquid composition the treatment of seeds of leguminous crops is disclosed. The liquid composition comprises phosphorus, molybdenum, cobalt and a solvent, wherein cobalt is present as vitamin B12 and the composition has a pH between 6.0 and 7.5, and wherein the composition comprises monoethanolamine. A method of preparing seeds of leguminous crops is also disclosed, comprising the steps of coating the seeds with the liquid composition, coating the seeds with a composition comprising a rhizobia inoculant, and drying the seeds coated with both compositions.

No. of Pages : 20 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054405 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HOT-RUNNER DEVICE, METHOD FOR BRANCHING MOLTEN RESIN IN HOT-RUNNER DEVICE, AND INJECTION STRETCH BLOW MOLDING MACHINE

(51) International classification	:B29C0049060000, B29C0045270000, B29C0048320000, F01N0003280000, B29C0045170000
(31) Priority Document No	:2019-108789
(32) Priority Date	:11/06/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/020222 :22/05/2020
(87) International Publication No	:WO/2020/250641
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)AOKI TECHNICAL LABORATORY, INC.
Address of Applicant :4963-3, Oaza Minamijo, Sakakimachi, Hanishina-gun, Nagano 3890603 Japan
(72)**Name of Inventor :**
1)MATSUZAWA Motohiro

(57) Abstract :
According to the present invention, while a molten resin can be fed from a hot-runner device such that a high-temperature and low-viscosity resin is not unevenly distributed, a preform in which the high-temperature and low-viscosity resin is not unevenly distributed in the circumferential direction is injection molded into a preform molding portion of an injection molding mold. An introduction runner portion 18 of a hot-runner device 9 is bent toward a transverse runner portion 15 after reaching a vertical plane A that passes through the position of the transverse runner portion 15 in the vertical direction, and the introduction runner portion 18 is connected, in the vertical plane A, to a portion midway along the transverse runner portion 15.

No. of Pages : 29 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054406 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LAMINATED GLAZING INCORPORATING THE ANTENNAS OF THE AUTOMATIC LANDING ASSISTANCE SYSTEM

(51) International classification	:B32B0017100000, B32B0007120000, B60J0001020000, C03C0017230000, C03C0003087000
(31) Priority Document No	:FR1906273
(32) Priority Date	:13/06/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/066029 :10/06/2020
(87) International Publication No	:WO/2020/249589
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAINT-GOBAIN GLASS FRANCE
Address of Applicant :Tour Saint-Gobain 12 Place de l'Iris 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)LEGOIS, Vincent
2)RACHET, Vincent

(57) Abstract :
The invention concerns: - a laminated glazing comprising at least one first glass sheet (1) and one second glass sheet (3) bonded to one another by means of a first intermediate adhesive layer (2), the first glass sheet (1) being intended to form the surface of the laminated glazing in contact with the exterior atmosphere, wherein the laminated glazing comprises, between the first glass sheet (1) and the second glass sheet (3), a LOC (Localizer) antenna receiving at between 100 and 120 MHz and a GLIDE (Slope) antenna receiving at between 320 and 340 MHz, each antenna being of sufficiently small dimensions so as not to interfere with vision, or even so as to be practically invisible through the laminated glazing; and - the application of this laminated glazing to a pressurised or unpressurised, fixed-wing or rotary-wing aircraft glazing.

No. of Pages : 9 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054412 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : UNIVERSAL DEVICE AND PROCEDURE FOR SAFETY MANAGEMENT OF RAILWAY VEHICLES / TRAINS, BASED ON THE OPTOELECTRONIC DEVICE DAY / NIGHT FOR RECOGNIZING FACILITIES WITH ASSISTENCE OF RANGEFINDER AND DEVICE FOR GEOGRAFICAL POSITIONING OF OBJECTS ON THE GROUND

(51) International classification	:B61L0027000000, B61L0003120000, B61L0023340000, B61L0015000000, B61K0009020000
(31) Priority Document No	:P-2019/0601
(32) Priority Date	:16/05/2019
(33) Name of priority country	:Serbia and Montenegro
(86) International Application No Filing Date	:PCT/RS2020/000004 :11/05/2020
(87) International Publication No	:WO/2020/231285
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BABIC, Milovan
Address of Applicant :Nedeljka Gvozdenovica 10 11070 Beograd Serbia and Montenegro
(72)**Name of Inventor :**
1)BABIC, Milovan

(57) Abstract :
The procedure and universal device (UD) for the safe management of railway vehicles/trains, created using an optoelectronic device with a rangefinder and a device for geographic positioning of objects on earth, fits into the field of protection and management of a railway vehicle/train. The device can be realized based on commercial equipment and applied commercial technologies. It consists of a commercial controller (eg PC 104 or panel PC) with standard communication interfaces, an audio interface with a speaker or audio system, a memory interface with memory unit, and a standard interface for digital/analog input-output connection with the equipment in the vehicle. Human-machine interface is realized via touch-screen. Basic functionality is achieved by using the optoelectronic device for recognition of the objects and/or geopositioning device, both connected to the main controller by the standard communication interface. The device is interoperable with all railway lines with maximum speed allowed 160 km/h, in the current state i.e. no need for adaptation of existing signal devices and no precondition for signalization (light/mechanical signals, pictograms...). UD integrates the following functionalities: speedometer, vigilance control, auto-stop device, data logger and the driver's assistant replacement, thus enabling control and management of the train on the entire line, without need for additional equipment. The Universal Device (UD) achieves the functionalities that can not be met by any other existing device (or system) for train control and management, including the latest issues of ETCS. UD has the following functionalities: discovers the obstacles on the line whether they came as a result of human activity or as an act of nature, enables the traffic of consecutive trains without any preconditions; no need for the device for train integrity check since it is integrated through the UD functionalities. The functionalities of the UD surpasses all other devices and systems currently in use on the railway lines with a speed limitation of 160km/h. At the same time, the UD costs a couple times less, the installation time is significantly shorter and the maintenance costs are lower in comparison to any other device or system with the similar functionalities.

No. of Pages : 15 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054413 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TAPE WINDER

(51) International classification	:G11B0015665000, G11B0025060000, B65H0018100000, B29C0063020000, A46B0013080000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/JP2019/025821 :28/06/2019
(87) International Publication No	:WO/2020/261535
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HAGIWARA Koji
Address of Applicant :3-9, Tsutoinari-cho, Nishinomiya-shi, Hyogo 6638247 Japan
(72)**Name of Inventor :**
1)HAGIWARA Koji

(57) Abstract :
An increased-diameter curved-surface part 6 that holds a roll tape 1 at the distal end of an arm 3 coupled with a turning shaft 4 secured to a rotating body 5, and that contacts the arm 3 turning during rotation, is provided. Within an angular range in which the arm 3 contacts the increased-diameter curved-surface part 6, the arm 3 is pressed in a rotationally outward direction while rotating, whereby tape is wound on an object 9 while the tape stretched from the roll tape 1 to the object 9 is drawn out. In an angular range in which the arm 3 does not contact the increased-diameter curved-surface part 6, the tape that was drawn out first from the roll tape 1 is wound while being taken up by the object 9, without drawing out the tape. Repeating these operations in an alternating manner suppresses displacement from the rotational center axis of the object and results in suitable winding being carried out.

No. of Pages : 6 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/11/2021

(21) Application No.202117054416 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ADDITIVE MANUFACTURING COMPOSITIONS AND METHODS

(51) International classification	:B33Y0010000000, B33Y0070000000, C08L0067060000, C08G0018670000, C07C0407000000
(31) Priority Document No	:62/854857
(32) Priority Date	:30/05/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/035581 :01/06/2020
(87) International Publication No	:WO/2020/243714
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)POLYNT COMPOSITES USA, INC.
Address of Applicant :100 East Cottage Avenue Carpentersville, IL 60110 U.S.A.
(72)**Name of Inventor :**
1)VOEKS, Steven, L.
2)ILKKA, John, Robert
3)ADAMS, Robert, M.
4)LEE, Allen, Chanzhe
5)MATHEWS, Michael, Allen

(57) Abstract :
A thermosetting composition comprising a crosslinkable component such as a vinyl ester and/or an unsaturated polyester, and an initiator component, such as cumene hydroperoxide or BPO or blends of cumene hydroperoxide and methyl ethyl ketone peroxide. The composition is suitable to be used in additive manufacturing to form objects such as molds or prototypes.

No. of Pages : 41 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/01/2022
(21) Application No.202217001539 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SENSOR SYSTEM, AND SENSOR SYSTEM FAILURE DETECTING METHOD

(51) International classification	:H02P0029024000, F15B0019000000, H03M0001700000, H05B0045500000, G01R0035000000
(31) Priority Document No	:2019-189002
(32) Priority Date	:15/10/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/038158 :08/10/2020
(87) International Publication No	:WO 2021/075351
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NGK SPARK PLUG CO., LTD.
Address of Applicant :14-18, Takatsuji-cho, Mizuho-ku, Nagoya-shi, Aichi 4678525 Japan
(72)**Name of Inventor :**
1)HIGUCHI Yuzo
2)OI Yuji
3)TODA Satoru
4)ABE Satoru
5)MITSUNO Junichiro
6)MAKINO Hidetoshi

(57) Abstract :
Provided is a sensor system capable of detecting a failure of a current D/A converter (DAC), and a method for detecting a failure of the sensor system. A sensor system (1, 1S) is provided with: a current D/A converter (42) which outputs a control current (Ip) for a sensor element (3S); a control unit (4C) which generates a control current command value (Ipcmd) corresponding to the magnitude of the control current, and inputs the same into the current DAC; a command value sequence generating unit (47) which generates an inspection command value sequence (RChcmd) with which it is possible to detect a failure of the current DAC, and in which predetermined inspection current command values (Chcmd) to be input into the current DAC instead of the control current command value are arranged sequentially; an inspection current detecting unit (71) which detects an inspection current value (Ichv) of an inspection current (Ich) output from the current DAC; and a failure detecting unit (8) which detects a failure of the current DAC from an inspection current value sequence (RIchv) in which the inspection current values are arranged in detected order.

No. of Pages : 44 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/01/2022

(21) Application No.202217002241 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : STEEL SHEET AND METHOD FOR MANUFACTURING SAME

(51) International classification	:C22C0038040000, C22C0038020000, C21D0009460000, C21D0008020000, C22C0038060000
(31) Priority Document No	:2019-185996
(32) Priority Date	:09/10/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/038262 :09/10/2020
(87) International Publication No	:WO 2021/070925
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NIPPON STEEL CORPORATION
Address of Applicant :6-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 1008071 Japan
(72)**Name of Inventor :**
1)TSUKAMOTO Eriko
2)TAKEDA Kengo

(57) Abstract :
This steel sheet has a predetermined chemical composition, and has a metal structure including, in area percentage, a total of 0-10% of ferrite, bainite, and perlite, and 1-15% of retained austenite, the remaining portion being martensite, wherein the proportion of retained austenite or martensite that has a width of 50 nm to 2 μm and that is present at a prior austenite grain boundary is 70% or more.

No. of Pages : 48 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/01/2022
(21) Application No.202217002853 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TAP

(51) International classification	:F16K0037000000, F16K0017040000, F16K0001320000, F16K0031020000, B65D0047240000
(31) Priority Document No	:1917659.3
(32) Priority Date	:03/12/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/IB2020/059493 :09/10/2020
(87) International Publication No	:WO 2021/111204
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HAWA VALVES AND TUBES PVT LTD
Address of Applicant :4th Floor, Nav Sonarbala Annexe 28th Road, Bandra (West) Mumbai 400050 Maharashtra India
(72)**Name of Inventor :**
1)HAWA, Javed Anwar

(57) Abstract :
A tap (100) is provided, comprising: a water inlet (6) for connecting to a supply of water; a water outlet (4) for dispensing a stream of water; a fluid passageway (5) connecting the water inlet (6) and outlet (4); a valve provided in the fluid passageway, the valve comprising a valve element (8) and a valve seat (7), the valve element (8) moveable between an open position in which a fluid can flow through the passageway (5) to a closed position where the valve element (8) seals with the valve seat (7) to inhibit fluid flowing through the passageway (5); and an actuator (9) extends out of the water outlet (4), the actuator (9) arranged to move the valve element (8) against a flow direction between the open and closed positions.

No. of Pages : 10 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/01/2022
(21) Application No.202217003499 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INSULATING GLAZING COMPRISING LAYERS OF ITO AND NIOBIUM NITRIDE

(51) International classification	:C03C0017360000, C03C0017340000, B82Y0020000000, H01L0029490000, C25B0011040000
(31) Priority Document No	:FR1911278
(32) Priority Date	:10/10/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/078326 :08/10/2020
(87) International Publication No	:WO 2021/069616
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAINT-GOBAIN GLASS FRANCE
Address of Applicant :Tour Saint-Gobain 12 Place de l'Iris 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)AGUIAR, Rosiana
2)ABADIE, Sacha

(57) Abstract :
Disclosed is a transparent glass article comprising at least one glass substrate, at least one of the faces of which is provided with a coating formed by a stack of thin layers, the coating comprising the following series of layers, with reference to the surface of said substrate: - a first layer comprising niobium nitride, - a layer comprising a conductive transparent oxide, - a second layer comprising niobium nitride, wherein the first and second layers comprising niobium nitride are directly in contact with the layer comprising a conductive transparent oxide.

No. of Pages : 13 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/02/2022

(21) Application No.202217008503 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COATING COMPOSITIONS AND METHODS WITH POLYFUNCTIONAL CARBAMATE SALT

(51) International classification	:C09J0007220000, C08G0018240000, C08G0077260000, C08G0059400000, C09D0004000000
(31) Priority Document No	:62/902049
(32) Priority Date	:18/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/049854 :09/09/2020
(87) International Publication No	:WO 2021/055195
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SWIMC LLC
Address of Applicant :1100 Midland - Legal Department 101 W. Prospect Ave. Cleveland, OH 44115 U.S.A.
(72)**Name of Inventor :**
1)McCORMICK, Nathan
2)LINDQUIST, Jason

(57) Abstract :
A latent base catalyst and compositions and methods involving latent base-catalyzed Michael addition reaction are described herein. The described latent base catalyst is a substituted carbamate salt. The compositions described herein are derived from a Michael addition reaction and provide coatings, including primer coatings and direct- to-metal coatings, which have optimal potlife and cure response, and also demonstrate optimal adhesion, corrosion resistance, and weatherability when applied to a substrate and cured.

No. of Pages : 27 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/02/2022
(21) Application No.202217008513 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : APPARATUS AND METHODS FOR NEW RADIO SIDELINK CHANNEL STATE INFORMATION ACQUISITION

(51) International classification	:H04L0005000000, H04W0024100000, H04W0072120000, H04W0072040000, H04L0001000000
(31) Priority Document No	:62/886740
(32) Priority Date	:14/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/046138 :13/08/2020
(87) International Publication No	:WO 2021/030565
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)IDAC HOLDINGS, INC.
Address of Applicant :200 Bellevue Parkway Suite 300 Wilmington, Delaware 19809 U.S.A.
(72)**Name of Inventor :**
1)LEE, Moon-il
2)DENG, Tao
3)FREDA, Martino M.
4)HOANG, Tuong
5)YE, Chunxuan

(57) Abstract :
A method for use in a wireless transmit/receive unit (WTRU) is disclosed. The WTRU is able to communicate with a network through sidelink (SL). The WTRU is configured with a set of scheduling request (SR) configurations. The method comprises: receiving, through the SL, (1) CSI reporting request which requests a CSI report and (2) CSI reporting latency information for the CSI report; starting a timer based on the received CSI reporting latency information; triggering a SR transmission specific to CSI reporting; and determining if a SL grant has been received before the time expires, wherein on a condition that the SL grant has been received before the timer expires, the method further comprises 205 transmitting the CSI report based on the SL grant; on a condition that no SL grant has been received before the timer expires, the method further comprises 206 dropping the CSI report.

No. of Pages : 50 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008536 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : OUTER ROTOR-TYPE MOTOR

(51) International classification	:H02K0001140000, H02K0007140000, H02K0001270000, B29L0007000000, B01L0003000000
(31) Priority Document No	:2019-152198
(32) Priority Date	:22/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/031142 :18/08/2020
(87) International Publication No	:WO 2021/033688
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NIDEC CORPORATION
Address of Applicant :338 Kuzetonoshiro-cho, Minami-ku, Kyoto-shi, Kyoto 6018205 Japan
(72)**Name of Inventor :**
1)NODA,Shinichi
2)SAKUMA,Yuichi

(57) Abstract :
One aspect of the present invention provides an outer rotor-type motor provide with a rotor having a bottomed cylindrical housing and a shaft provided at the central axis of the rotor. The housing has a disk part in one end side of the shaft, and the disk part has a reference surface and a plurality of protruding sections that radially extend and axially protrude from the reference surface. In the disk part, the plurality of protruding sections are provided so that a combination of at least one group of different angles among the angles formed by the adjacent protruding sections among the plurality of protruding sections is present.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008539 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POLYESTER FILM ROLL

(51) International classification	:B32B0027360000, C08J0005180000, C08J0007040000, B29K0067000000, B32B0037180000
(31) Priority Document No	:2019-151721
(32) Priority Date	:22/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/028747 :27/07/2020
(87) International Publication No	:WO 2021/033494
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MITSUBISHI CHEMICAL CORPORATION
Address of Applicant :1-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 1008251 Japan
(72)**Name of Inventor :**
1)HATTORI, Yuta

(57) Abstract :
This polyester film roll is formed by winding a polyester film, wherein the polyester film satisfies the following (1) and (2). (1) When the polyester film is heat-treated at 100°C for 5 minutes, at the edge of the film, the absolute value of the difference between heat shrinkage in the diagonally left 45° direction and heat shrinkage in the diagonally right 45° direction with respect to 0° in the longitudinal direction (MD direction) of the film is at most 0.15%. (2) The average surface roughness (Sa) of at least one surface of the polyester film is at most 8 nm.

No. of Pages : 39 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008548 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COATING COMPOSITIONS

(51) International classification	:C08G0059180000, C10L0001220000, C10L0001238300, C09D0167000000, C08G0018380000
(31) Priority Document No	:62/890675
(32) Priority Date	:23/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/039130 :23/06/2020
(87) International Publication No	:WO 2021/040867
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PPG INDUSTRIES OHIO, INC.
Address of Applicant :3800 West 143rd Street Cleveland, Ohio 44111 U.S.A.
(72)**Name of Inventor :**
1)KRILEY, Joseph P.
2)POLLUM, JR., Marvin M.
3)FORTMAN, David J.
4)REARICK, Brian K.
5)NAKAJIMA, Masayuki
6)FRENCH, Maria S.

(57) Abstract :
Disclosed is an epoxide-functional adduct (E2) and an amine-functional adduct (A3) and coating compositions including these adducts. The epoxide-functional adduct (E2) comprises a reaction product of a reaction mixture comprising (a) an epoxy-containing compound (E1) and (b) a diamine comprising a cyclic ring and/or a polyamine comprising a cyclic ring (A1). The amine-functional adduct comprises a reaction product of a reaction mixture comprising the epoxy-functional adduct (E2) and a monoamine, diamine, and/or polyamine (A2), wherein the monoamine, diamine, and/or polyamine (A2) are different than the diamine comprising a cyclic ring and/or the polyamine comprising a cyclic ring (A1). The present invention is also directed to methods of making the compositions, methods of coating a substrate, and coated substrates.

No. of Pages : 46 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008549 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SSEA-4 BINDING MEMBERS

(51) International classification	:A61K0039000000, C12N0005078300, C07K0014725000, C07K0016300000, C07K0016180000
(31) Priority Document No	:1912882.6
(32) Priority Date	:06/09/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/EP2020/074878 :04/09/2020
(87) International Publication No	:WO 2021/044039
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SCANCELL LIMITED
Address of Applicant :John Eccles House Robert Robinson Avenue Oxford Science Park Oxford Oxfordshire OX4 4GP U.K.
(72)**Name of Inventor :**
1)DURRANT, Linda Gillian
2)CHUA, JiaXin

(57) Abstract :
The disclosure relates to the expression of stage-specific embryonic antigen 4 (SSEA-4) on stem memory T-cells (TSCM), which can then be used as a target to isolate, activate and expand this T cell subset both in vivo and in vitro. It also relates to the pharmaceutical antibody composition binding SSEA-4 targeting TSCM, as well as methods for use thereof. The antibody of the disclosure recognises the SSEA-4 glycolipid and induces proliferation of TSCM which could be used to sort this unique population from blood for clinical expansion for adoptive T-cell transfer of T-cell receptor (TCR) transduced, chimeric antigen receptor (CAR)-T transduced or cells for haematopoietic stem cell transplant. Methods of use include, without limitation, in cancer therapies and diagnostics. Examples related to the antibody with the designation F2811.72.

No. of Pages : 68 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008555 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS AND SYSTEMS FOR UTILIZING CALCIUM COMPOUND FROM CALCINED LIMESTONE

(51) International classification	:C01F0011180000, B01D0053620000, C04B0028020000, B01D0053560000, C01F0011460000
(31) Priority Document No	:62/876711
(32) Priority Date	:21/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042810 :20/07/2020
(87) International Publication No	:WO 2021/016200
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ARELAC, INC.
Address of Applicant :251 E. Hacienda Avenue Suite B Campbell, California 95008 U.S.A.
(72)**Name of Inventor :**
1)WEISS, Michael Joseph
2)GILLIAM, Ryan

(57) Abstract :
Provided herein are methods comprising a) calcining limestone in a cement plant to form carbon dioxide and calcium compound selected from calcium oxide, calcium hydroxide, or combination thereof; b) treating the calcium compound with N-containing salt in water to produce an aqueous solution comprising calcium salt and N-containing salt; and c) contacting the aqueous solution with the carbon dioxide under one or more precipitation conditions to produce a precipitation material comprising calcium carbonate and a supernatant aqueous solution wherein the calcium carbonate comprises vaterite.

No. of Pages : 52 No. of Claims : 35

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008556 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN UNMANNED AERIAL VEHICLE (UAV)-BASED SYSTEM FOR COLLECTING AND DISTRIBUTING ANIMAL DATA FOR MONITORING

(51) International classification	:A01K0011000000, G06Q0010080000, A01K0029000000, G16B0020000000, B64C0039020000
(31) Priority Document No	:16/517012
(32) Priority Date	:19/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042705 :20/07/2020
(87) International Publication No	:WO 2021/016148
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SPORTS DATA LABS, INC.
Address of Applicant :1919 Greenleaf Drive Royal Oak, Michigan 48067 U.S.A.
(72)**Name of Inventor :**
1)GORSKI, Mark
2)KHARE, Vivek
3)MIMOTO, Stanley

(57) Abstract :
An unmanned aerial vehicle-based data collection and distribution system includes a source of animal data that can be transmitted electronically. The source of animal data includes at least one sensor. The animal data is collected from at least one target individual. The system also includes an unmanned aerial vehicle that receives the animal data from the source of animal data as a first set of received animal data and a home station that receives the first set of received animal data. Characteristically, the unmanned aerial vehicle includes a transceiver operable to receive signals from the source of animal data and to send control signals to the source of animal data

No. of Pages : 64 No. of Claims : 52

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008564 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SACCHARIDE FATTY ACID ESTER LATEX BARRIER COATING COMPOSITIONS

(51) International classification	:D21H0021160000, A61K0008970000, D21H0027100000, A01N0025120000, A61Q0017000000
(31) Priority Document No	:62/881291
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/IB2020/057166 :29/07/2020
(87) International Publication No	:WO 2021/019467
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GREENTECH GLOBAL PTE. LTD.
Address of Applicant :9 Raffles Place, Republic Plaza 1, #06-00 Singapore 048619 Singapore
(72)**Name of Inventor :**
1)BILODEAU, Michael Albert
2)SPENDER, Jonathan

(57) Abstract :
The present disclosure describes methods of treating cellulosic materials with barrier coating compositions that allow for modifications of surfaces, including making such surfaces exhibit barrier functions such as oil and grease resistance, water resistance and the like. The methods as disclosed provide combining at least one saccharide fatty acid ester (SFAE) with polymers and applying such combinations on substrates including cellulose-based materials. Compositions comprising combinations of SFAE and polymers are also disclosed, including the use of such compositions to reduce blocking effects of said polymers without affecting the barrier performance or folding of articles of manufacture coated with said compositions. In addition, blocking ratings data for SFAE-polymer compositions may be used to identify conditions under which adhesive properties may be exploited to produce compositions that allow for effective heat sealing of articles of manufacture.

No. of Pages : 64 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008584 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FUNGICIDAL COMBINATIONS, MIXTURES AND COMPOSITIONS AND USES THEREOF

(51) International classification	:A01N0043560000, A01N0043100000, A01N0043653000, A01N0037220000, A01N0043540000
(31) Priority Document No	:62/877180
(32) Priority Date	:22/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/IB2020/056828 :21/07/2020
(87) International Publication No	:WO 2021/014346
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ADAMA MAKHTESHIM LTD.
Address of Applicant :P.O. Box 60 8410001 Beer Sheva Israel
2)SHABTAI, Sami
(72)**Name of Inventor :**
1)SHABTAI, Sami

(57) Abstract :
The present invention provides fungicidal combination comprising: (i) an amount of a compound of Formula I and (ii) an amount of at least one fungicide (A) selected from the group consisting of fluindapyr, pydiflumetofen, mefentrifluconazole, inpyrfluxam, isofetamid and Qi inhibitor.

No. of Pages : 77 No. of Claims : 35

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008590 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : VEHICLE GLASS PANEL WITH INSERT AND ASSOCIATED THERMAL CAMERA DEVICE

(51) International classification	:B32B0017100000, H04N0005330000, B60J0001000000, H02S0040440000, H04N0005225000
(31) Priority Document No	:FR1909833
(32) Priority Date	:06/09/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/074491 :02/09/2020
(87) International Publication No	:WO 2021/043838
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAINT-GOBAIN GLASS FRANCE
Address of Applicant :Tour Saint-Gobain 12 Place de l'Iris 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)OUSPENSKI, Vladimir
2)YAVARI, Keihann

(57) Abstract :
The invention relates to a vehicle glass panel (100) comprising, in a peripheral zone, a through-hole comprising an insert (2) made of a material with a crystalline structure, which is transparent in a range A of wavelengths in the infrared spectrum of at least 9.5 to 10.5 µm and said material of the insert is transparent in the visible spectrum at a reference wavelength ranging between 500 nm and 600 nm. The invention also relates to the device with said glass panel and a thermal camera.

No. of Pages : 14 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008596 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND DEVICE FOR PRODUCING AN ELECTRIC MACHINE, ELECTRIC MACHINE AND GROUP OF ELECTRIC MACHINES

(51) International classification	:H01F0027280000, H02K0003020000, H02K0003500000, H01S0003040000, H02K0003280000
(31) Priority Document No	:10 2019 213 232.4
(32) Priority Date	:02/09/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/074346 :01/09/2020
(87) International Publication No	:WO 2021/043765
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.
Address of Applicant :Hansastraße 27c 80686 München Germany
(72)**Name of Inventor :**
1)WÖSTMANN, Franz-Josef
2)BUSSE, Matthias

(57) Abstract :
Method for producing an electric machine. Proceeding from a defined construction of the machine depending on one or more parameters that correspond to a maximum value of a mean current density over time in the one or more winding(s), and the price category, a design of the winding is allocated from a number of defined designs, wherein the designs comprise in particular a cast winding made of copper, a cast winding made of a copper alloy, a cast winding made of aluminium, a cast winding made of an aluminium alloy, a cast winding made of magnesium, a cast winding made of a conductive plastic, an insulating system, wherein the list from which the design of the insulating system is selected comprises insulating systems of the thermal class 180°C, the thermal class 250°C and the thermal class 300°C, a cooling system selected from the designs of an air cooling system, a direct water cooling system, an indirect water cooling system, or a subselection of these designs.

No. of Pages : 18 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008597 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HOT STAMP MOLDED BODY

(51) International classification	:C22C0038000000, C22C0038580000, C22C0038060000, C22C0021020000, C22C0038040000
(31) Priority Document No	:2019-157206
(32) Priority Date	:29/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/032646 :28/08/2020
(87) International Publication No	:WO 2021/039973
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NIPPON STEEL CORPORATION
Address of Applicant :6-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 1008071 Japan
(72)**Name of Inventor :**
1)MITSUNOBU Takuya
2)TOKUDA Kohei
3)TAKAHASHI Takehiro
4)TAKEBAYASHI Hiroshi

(57) Abstract :
This hot stamp molded body is provided with a base material, a plating layer formed on the surface of the base material, and an oxide film formed on the surface of the plating layer, wherein: the plating layer has a chemical composition of containing 20.00-45.00 mass% of Al, 10.00-45.00 mass% of Fe, 4.50-15.00 mass% of Mg, 0.10-3.00 mass% of Si, 0.05-3.00 mass% of Ca, 0-0.50 mass% of Sb, 0-0.50 mass% of Pb, 0-1.00 mass% of Cu, 0-1.00 mass% of Sn, 0-1.00 mass% of Ti, 0-0.50 mass% of Sr, 0-1.00 mass% of Cr, 0-1.00 mass% of Ni, 0-1.00 mass% of Mn, and the balance comprising Zn and impurities; and the oxide film has a chemical composition containing 20.0-55.0 atomic% of Mg, 0.5-15.0 atomic% of Ca, 0 to 15.0 atomic% of Zn, 0-10.0 atomic% (exclusive of 10.0) of Al, and the balance comprising O and at most 5.0 atomic% of impurities in total, and the one side adhesion amount of the oxide film is 0.01-10 g/m2.

No. of Pages : 28 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008598 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS AND REAGENTS FOR NUCLEIC ACID SEQUENCING AND ASSOCIATED APPLICATIONS

(51) International classification	:C12Q0001687400, C12Q0001686900, C12P0019340000, A61P0037080000, C12Q0001688600
(31) Priority Document No	:62/881936
(32) Priority Date	:01/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044673 :01/08/2020
(87) International Publication No	:WO 2021/022237
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TWINSTRAND BIOSCIENCES, INC.
Address of Applicant :3131 Elliott Avenue, Suite 750 Seattle, Washington 98121 U.S.A.
(72)**Name of Inventor :**
1)SALK, Jesse J.

(57) Abstract :
The present technology relates generally to the methods and associated reagents for providing error-corrected nucleic acid sequences. In particular, several embodiments are directed to adapter molecules comprising a hairpin shape and methods of use of such adapters in Duplex Sequencing and other sequencing applications. In some embodiments, physically-linked nucleic acid complexes comprising both the first strand and the second strand can be amplified and independently sequenced in a same clonal cluster on a sequencing surface.

No. of Pages : 71 No. of Claims : 54

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008620 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR ATTRIBUTING OLFACTORY TONALITIES TO OLFACTORY RECEPTOR ACTIVATION AND METHODS FOR IDENTIFYING COMPOUNDS HAVING THE ATTRIBUTED TONALITIES

(51) International classification	:G01N0033500000, G01N0033680000, G01N0033566000, C11B0009000000, C12N0015860000
(31) Priority Document No	:62/911096
(32) Priority Date	:04/10/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/EP2020/077711 :02/10/2020
(87) International Publication No	:WO 2021/064201
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FIRMENICH SA
Address of Applicant :7, rue de la Bergère 1242 Satigny Switzerland
(72)**Name of Inventor :**
1)SMITH, Ben
2)PFISTER, Patrick
3)WU, Lily
4)JEONG, Hyo, Young
5)RAPS, Daniel

(57) Abstract :
The present invention relates to the perfumery industry. More particularly, the present invention relates to assays and methods for screening and identifying compositions and/or ingredients that intensify a subject's perception of target odorant compounds based on the use of particular olfactory receptors activated by the target odorant compound.

No. of Pages : 60 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008623 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS AND SYSTEMS FOR STATE NAVIGATION

(51) International classification	:H04W0072040000, G06F0016280000, G06N0007000000, C12N0015880000, H04B0007041300
(31) Priority Document No	:61/876753
(32) Priority Date	:21/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/CA2020/051000 :20/07/2020
(87) International Publication No	:WO 2021/012040
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HATAMI-HANZA, Hamid
Address of Applicant :244 Hendesron Ave Thornhill, ontario L3T 2M1 Canada
(72)**Name of Inventor :**
1)HATAMI-HANZA, Hamid

(57) Abstract :
Methods and systems are given to build and enable systems to acquire knowledge from bodies of data in order to become capable of showing sane, rational, and credible behavior or output. Such systems includes software and/or hardware artifacts and/or stationary or mobile machines such as vehicles, robots, transportation systems, and in general systems with intelligent state-navigation capabilities. Aspects of this disclosure are to provide technical frame- works, methods, and systems to build artificially intelligent beings with explainability and interpretability.

No. of Pages : 112 No. of Claims : 33

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008624 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : UREA COMPOUND FOR ANTAGONIZING LPA1 RECEPTOR

(51) International classification	:C07D0333160000, C07D0213750000, C07D0207090000, C07D0319200000, C07D0261140000
(31) Priority Document No	:2019-140088
(32) Priority Date	:30/07/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/029003 :29/07/2020
(87) International Publication No	:WO 2021/020429
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TAISHO PHARMACEUTICAL CO., LTD.
Address of Applicant :24-1, Takada 3-chome, Toshima-ku, Tokyo 1708633 Japan
(72)**Name of Inventor :**
1)KURODA, Shoichi
2)KOBAYASHI, Yuki
3)HATANAKA, Kanako
4)ITO, Yuji
5)UNEUCHI, Fumito
6)UEHARA, Yuko

(57) Abstract :
The present invention provides a compound represented by formula (I) or a pharmaceutically acceptable salt thereof which has the effect of antagonizing the LPA1 receptor.

No. of Pages : 662 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008630 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN INTEGRATED AIR CONDITIONING AND LIQUID HEATING SYSTEM

(51) International classification	:G09G0003360000, F25B0013000000, F24F0005000000, F24D0003180000, A47J0027210000
(31) Priority Document No	:PI 2019004808
(32) Priority Date	:21/08/2019
(33) Name of priority country	:Malaysia
(86) International Application No Filing Date	:PCT/MY2020/050066 :06/08/2020
(87) International Publication No	:WO 2021/034182
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DAIKIN RESEARCH & DEVELOPMENT MALAYSIA SDN. BHD.
Address of Applicant :Lot 60334, Persiaran Bukit Rahman Putra 3, Taman Perindustrian Bukit Rahman Putra, 47000 Sungai Buloh Selangor Malaysia
(72)**Name of Inventor :**
1)POH, Hong Hong
2)LING, Kenny James Neng Hui
3)OTAKI, Shizuo
4)LIM, Ching Hon

(57) Abstract :
The invention provides an integrated air conditioning and liquid heating system (100) comprising a refrigeration circuit (110) having one or more primary heat exchangers (101); a liquid heating circuit (120); and a secondary heat exchanger (102) connected to the refrigeration circuit (110) and liquid heating circuit (120); wherein the system (100) is configured to selectively activate and configure function of the primary heat exchangers (101) and secondary heat exchanger (102) for providing switchable operation modes including space cooling by the refrigeration circuit, liquid heating by the liquid heating circuit or both with similar or different cooling load and heating load.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008635 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BASE, CAMERA MODULE AND ELECTRONIC DEVICE

(51) International classification	:H04N0005225000, G01J0003020000, G01J0001440000, B29D0011000000, G02B0007020000
(31) Priority Document No	:201921312330.9
(32) Priority Date	:14/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/109063 :14/08/2020
(87) International Publication No	:WO 2021/027906
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)OFILM GROUP CO., LTD.
Address of Applicant :Ofilm Science and Technology Park, Huafa Road Section Songbai Road, Gongming Street, Guangming New District Shenzhen, Guangdong 518106 China
2)NANCHANG OFILM OPTICAL-ELECTRONIC TECH CO., LTD.
(72)**Name of Inventor :**
1)MA, Zhongke
2)CHEN, Xiaofeng
3)SHEN, Chengzhe

(57) Abstract :
The present application relates to a base (10), a camera module (100) and an electronic device (1000). The base (10) is used for bearing a lens (20), and comprises: a substrate (1) connected to the lens (20), the substrate (1) being provided with a mounting hole (13); a photosensitive chip (2) arranged in the mounting hole (13) and opposite the lens (20); and a support structure (6) arranged in the mounting hole (13), connected to an inner wall (131) of the mounting hole (13) and connected to a surface, away from the lens (20), of the photosensitive chip (2) so as to support the photosensitive chip (2).

No. of Pages : 13 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008636 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PLANT SUPPLEMENT DELIVERY ASSEMBLIES, PLANT SUPPLEMENT DELIVERY ASSEMBLY INSERTS, AND METHODS FOR DELIVERING PLANT SUPPLEMENTS

(51) International classification	:A01G0009029000, A61F0002460000, F24F0003160000, A45D0034040000, A61M0005140000
(31) Priority Document No	:62/906486
(32) Priority Date	:26/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/052568 :24/09/2020
(87) International Publication No	:WO 2021/062046
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BATTELLE MEMORIAL INSTITUTE
Address of Applicant :Dept. K1-53, P.O. Box 999 Richland, WA 99352 U.S.A.
(72)**Name of Inventor :**
1)SIMMONS, Kevin L.
2)OWSLEY JR., Stanley L.
3)CLELLAND, Dustin T.

(57) Abstract :
Plant supplement delivery assemblies are provided that can include an insert having collapsible insert sidewalls complimentary to the exterior sidewalls of the assembly housing, the collapsible insert sidewalls defining at least a portion of a container configured to house a plant supplement. Plant supplement delivery inserts are also provided that can include collapsible sidewalls extending between a discharge end and a butt end to define a container configured to house plant supplement. The butt end can be configured to operably engage a biased member, and the insert can further include a stem extending from the discharge end. The stem can define a conduit in fluid communication with the container. Methods for providing plant supplements include operably engaging a biased member with a butt end of a container to collapse sidewalls of the container and provide plant supplement from the container through a stem into a plant.

No. of Pages : 41 No. of Claims : 36

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008639 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NON-ORIENTED ELECTROMAGNETIC STEEL SHEET AND METHOD FOR PRODUCING SAME

(51) International classification	:C21D0008120000, C22C0038000000, C22C0038060000, C22C0038040000, C22C0038020000
(31) Priority Document No	:2019-196428
(32) Priority Date	:29/10/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/019159 :13/05/2020
(87) International Publication No	:WO 2021/084785
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)JFE STEEL CORPORATION
Address of Applicant :2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo 1000011 Japan
(72)**Name of Inventor :**
1)ODA Yoshihiko
2)ZAIZEN Yoshiaki
3)OKUBO Tomoyuki
4)TANAKA Takaaki
5)MIYAMOTO Yukino

(57) Abstract :
The present invention provides a non-oriented electromagnetic steel sheet which has excellent magnetic flux density B50, excellent iron loss characteristics at high frequencies, high tensile strength and high fatigue strength, while being suppressed in variation in the tensile strength, and which is suitable for use in a rotor of an IPM motor. A non-oriented electromagnetic steel sheet according to the present invention has a predetermined steel sheet component composition, while having a structure wherein the non-recrystallized structure ratio is from 5 to 70% and the number of inclusions having a diameter of 5 μm or more is 5 per mm2 or less.

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008644 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MANUFACTURE OF SURFACE RELIEF STRUCTURES

(51) International classification	:H01L0029490000, H01L0021308000, H01L0021321300, H01L0029450000, H01L0021033000
(31) Priority Document No	:1911981.7
(32) Priority Date	:21/08/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051997 :20/08/2020
(87) International Publication No	:WO 2021/032983
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BAE SYSTEMS PLC
Address of Applicant :6 Carlton Gardens London SW1Y 5AD U.K.
(72)**Name of Inventor :**
1)STURLAND, Ian
2)VENABLES, Mark
3)HAWKE, Tracey
4)MILLS, Rory

(57) Abstract :
A method and apparatus for the etching of variable depth features in a substrate is described. Movement of the substrate relative to an etchant (e.g. into or out of the etchant)during the etching process is utilised to provide a varying etch time, and hence depth,across the substrate, and in various examples this is enabled without requiring a varying mask.

No. of Pages : 14 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008667 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUSTENITIC STAINLESS STEEL MATERIAL AND WELDED JOINT

(51) International classification	:C22C0038000000, C22C0038060000, C22C0038020000, C22C0038040000, C22C0038220000
(31) Priority Document No	:2019-136668
(32) Priority Date	:25/07/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/028586 :22/07/2020
(87) International Publication No	:WO 2021/015283
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NIPPON STEEL CORPORATION
Address of Applicant :6-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 1008071 Japan
(72)**Name of Inventor :**
1)OSUKI, Takahiro
2)SUZUKI, Yuhei
3)AOTA, Shohgo
4)OKADA, Hirokazu
5)SETO, Masahiro

(57) Abstract :
The present invention provides an austenitic stainless steel material which exhibits excellent sensitization resistance characteristics even when used for a long period of time at an average operating temperature of 400-700°C after high heat input welding. This steel material has a chemical composition that satisfies formula (1) and that contains, in terms of mass%, 0.020% or less of C, 1.50% or less of Si, 2.00% or less of Mn, 0.045% or less of P, 0.0300% or less of S, 15.00-25.00% of Cr, 9.00-20.00% of Ni, 0.05-0.15% of N, 0.1-0.8% of Nb, 0.10-4.50% of Mo and 0.01-1.00% of W. The content of Nb in a residue obtained using an extraction residue method is 0.050-0.267 mass%. The content of Cr in the residue is 0.125 mass% or less. Formula (1): 21.9Mo+5.9W-5.0 = 0

No. of Pages : 85 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008684 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SINGLE SITE CATALYSED MULTIMODAL POLYETHYLENE COMPOSITION

(51) International classification	:C08F0210160000, C08L0023060000, C08L0023080000, C08L0023040000, C08F0110020000
(31) Priority Document No	:19187632.5
(32) Priority Date	:22/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/069282 :08/07/2020
(87) International Publication No	:WO 2021/013552
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ABU DHABI POLYMERS CO. LTD (BOROUGE) L.L.C.
Address of Applicant :Sheikh Khalifa Energy Complex P. O. Box 6925, Corniche Road Abu Dhabi U.A.E.
2)BOREALIS AG
(72)**Name of Inventor :**
1)SINGH, Raghvendra
2)ABU FOUL, Tariq Hashim
3)VERMA, Pankaj
4)BANDYOPADHYAY, Pratyush
5)DIXIT, Niraj

(57) Abstract :
The present invention relates to a polyethylene composition comprising a base resin, wherein the base resin comprises (A) a first ethylene-1-butene copolymer fraction (A) having a 1-butene content of from 0.5 wt% to 7.5 wt%, based on the total weight amount of monomer units in the first ethylene-1-butene copolymer fraction (A), and a melt flow rate MFR2 in the range of from 1.0 to less than 50.0 g/10 min, determined according to ISO 1133 at a temperature of 190°C and a load of 2.16 kg; and (B) a second ethylene-1-butene copolymer fraction having a higher 1-butene content as the first ethylene-1-butene copolymer fraction (B); wherein the base resin is polymerized in the presence of a single site catalyst system and has a density of from 913.0 to 920.0 kg/m3 and a 1-butene content of from 8.0 to 13.0 wt%, based on the total weight amount of monomer units in the base resin, a process for preparing said polyethylene composition, an article comprising said polyethylene composition and the use of said polyethylene composition for the production of an article.

No. of Pages : 49 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008685 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR REMOVING INK OR OTHER FOREIGN MATERIALS FROM THE SURFACE OF AN ARTICLE

(51) International classification	:D21C0005020000, C08J0011080000, C23C0018160000, C08J0009280000, B29K0025000000
(31) Priority Document No	:19188618.3
(32) Priority Date	:26/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/070086 :16/07/2020
(87) International Publication No	:WO 2021/018605
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BOREALIS AG
Address of Applicant :IZD Tower Wagramer Str. 17-19 1220 Vienna Austria
(72)**Name of Inventor :**
1)JONES, Simon Anthony
2)REGUILLO CARMONA, Rebeca
3)PIETTRE, Kilian
4)VIJAY, Sameer
5)GANGLBERGER, David

(57) Abstract :
The present invention relates to a method for removing ink and/or a foreign material different from ink from the surface of an article, wherein at least a part of the surface of the article comprises a polymer selected from the group consisting of polyolefins, polystyrene, melamine polymers, polyvinyl chloride, polyethylene terephthalate, polyamides and mixtures thereof, the method comprises the following steps: i) providing an ink imprinted article and/or an article having a surface covered at least partly by a foreign material different from ink; ii) contacting the article provided in step i) with an acid having a pKa in the range from -10 to 7 having a minimum concentration of 1 wt.-% for solving the ink and/or the foreign material different from ink or their degradation products in the acid; iii) separating the acid and the therein dissolved ink- and/or foreign material different from ink or their degradation products from the article to obtain a deinked article and/or an article with a surface free from foreign material. Furthermore, the present invention refers to the use of the method for the recycling of polymers.

No. of Pages : 17 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008687 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : OPTICAL FIBER SENSING SYSTEM, ROAD MONITORING METHOD, AND OPTICAL FIBER SENSING EQUIPMENT

(51) International classification	:G01H0009000000, G08G0001040000, H04M0001725000, G08G0001010000, G01S0017880000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/JP2019/033368 :26/08/2019
(87) International Publication No	:WO 2021/038695
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NEC CORPORATION
Address of Applicant :7-1, Shiba 5-chome, Minato-ku, Tokyo 1088001 Japan
(72)**Name of Inventor :**
1)TANAKA Toshiaki
2)MIYAMOTO Shinichi

(57) Abstract :
An optical fiber sensing system according to the present disclosure comprises: an optical fiber (10) that is disposed along a road R and that detects vibrations; a detection unit (21) that detects, from optical signals received from the optical fiber (10), the vibration patterns of vibrations arising due to a traffic accident which has occurred on the road R; and an estimation unit (22) that estimates the state of the traffic accident on the basis of the vibration patterns.

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022
(21) Application No.202217008688 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CORE NETWORK NODE, ACCESSIBILITY MANAGEMENT DEVICE, AND COMMUNICATION METHOD

(51) International classification	:H04L0029060000, H04W0048020000, H04W0048180000, H04W0084040000, H04W0088080000
(31) Priority Document No	:2019-174767
(32) Priority Date	:25/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/033950 :08/09/2020
(87) International Publication No	:WO 2021/059966
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NEC CORPORATION
Address of Applicant :7-1, Shiba 5-chome, Minato-ku, Tokyo 1088001 Japan
(72)**Name of Inventor :**
1)TAMURA Toshiyuki
2)TAKAKURA Tsuyoshi

(57) Abstract :
The purpose of the present invention is to provide an accessibility management device with which it is possible to properly assess the allowability of access to a network slice. An accessibility management device (10) according to the present disclosure comprises: a communication unit (11) for transmitting first information to a core network node (15), the first information indicating whether a network slice-specific authentication and authorization (NSSAA) function is supported, and receiving second information from the core network node (15), the second information pertaining to a network slice that corresponds to the first information; and a control unit (12) for assessing, on the basis of the second information, whether to permit the use of the network slice by a wireless terminal.

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008704 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FUSION POLYPEPTIDE FOR IMMUNOTHERAPY

(51) International classification	:C07K0014705000, C07K0014725000, C07K0016280000, A61K0039000000, A61K0035170000
(31) Priority Document No	:62/876338
(32) Priority Date	:19/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042753 :20/07/2020
(87) International Publication No	:WO 2021/016174
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MEMORIAL SLOAN-KETTERING CANCER CENTER
Address of Applicant :1275 York Avenue New York, NY 10065 U.S.A.
2)SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH
3)MEMORIAL HOSPITAL FOR CANCER AND ALLIED DISEASES
(72)**Name of Inventor :**
1)DOBRIN, Anton
2)SADELAIN, Michel
3)HAMIEH, Mohamad

(57) Abstract :
The presently disclosed subject matter provides methods and compositions for enhancing immune responses toward tumor and pathogen antigens. It relates to fusion polypeptide that can be expressed in cells (e.g., immunoresponsive cells comprising an antigen-recognizing receptor) to improve the activity and/or efficiency of the cells. In certain embodiments, the fusion polypeptide comprises an extracellular domain and a transmembrane domain of a co-stimulatory ligand, and an intracellular domain of a costimulatory molecule.

No. of Pages : 123 No. of Claims : 133

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008713 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INORGANIC POLYMERS AND USE THEREOF IN COMPOSITE MATERIALS

(51) International classification	:C04B0111000000, B82Y0030000000, C04B0028260000, C04B0041000000, C04B0028000000
(31) Priority Document No	:10 2019 005 107.6
(32) Priority Date	:23/07/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/070704 :22/07/2020
(87) International Publication No	:WO 2021/018694
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)AGEMOS AG
Address of Applicant :Zugerstraße 116 6330 Cham Switzerland
(72)**Name of Inventor :**
1)EHSAEI, Hossein
2)SPANGENBERG, Bernd
3)FUTTERKNECHT, Sidon

(57) Abstract :
The invention relates to a new inorganic polymer which is based on modified water glass, is characterized by numerous unusual properties and can be used as a substitute for, for example, concrete, cement and ceramics.

No. of Pages : 24 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008714 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS AND DEVICES FOR DELIVERING IMPLANTABLE PROSTHESES

(51) International classification	:A61F0002240000, A61M0025000000, A61B0017040000, A61M0025010000, A61B0017000000
(31) Priority Document No	:62/895388
(32) Priority Date	:03/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/048885 :01/09/2020
(87) International Publication No	:WO 2021/046018
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ELIXIR MEDICAL CORPORATION
Address of Applicant :920 N. McCarthy Boulevard Suite 100 Milpitas, California 95035 U.S.A.
(72)**Name of Inventor :**
1)SIRHAN, Motasim
2)YAN, John
3)BHAT, Vinayak
4)PARASCHAC, Joseph
5)SERNA, Benjamyn

(57) Abstract :
A catheter system for delivering an anchor to a valve annulus in a heart valve includes a locating catheter and an anchor delivery catheter. The locating catheter has a distal end which can be advanced beneath the valve annulus near a target site on an upper surface of the valve annulus. The anchor delivery catheter has a distal end which can be advanced over the valve annulus to deliver an anchor along a delivery path to the target site. The distal end of the locating catheter has at least one magnetic element, and the distal end of the anchor delivery catheter has at least one magnetic element which attracts the at least one magnetic element on the locating catheter to pivotally couple the distal end of the anchor delivery catheter to the distal end of the locating catheter.

No. of Pages : 47 No. of Claims : 32

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008717 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : LEAK-RESISTANT TRAY AND LID

(51) International classification	:B65D0043020000, B65D0001360000, B65D0025200000, B65D0090100000, B65D0047060000
(31) Priority Document No	:62/889006
(32) Priority Date	:19/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/046999 :19/08/2020
(87) International Publication No	:WO 2021/034935
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ZUME, INC.
Address of Applicant :151 Factory Stores Drive Camarillo, California 93010 U.S.A.
(72)**Name of Inventor :**
1)BONTRAGER, Rick
2)MAURIELLO, John
3)LEKEU, Esther

(57) Abstract :
A container includes a molded tray and a molded lid, both made of unitary fiber bodies. The tray includes at least one internal well and a perimeter engaging wall extending upward from a perimeter rim. The perimeter engaging wall includes an inner surface, an outer surface, and an uppermost surface. The lid includes a ceiling and defines a perimeter engaging receiver extending upward from a perimeter rim. The rim is defined by an inner wall, an outer wall, and an uppermost wall. The perimeter engaging wall is configured to be removably received in the perimeter engaging receiver.

No. of Pages : 14 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2022

(21) Application No.202217008719 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : A SMART SAFETY NETWORK SYSTEM FOR TRACKING A MOBILE COMPUTING DEVICE IN AN EMERGENCY ENVIRONMENT AND A METHOD THEREOF

(51) International classification	:H04W0004029000, H04W0004020000, H04L0029080000, G06Q0030020000, G01S0005020000
(31) Priority Document No	:10201907628V
(32) Priority Date	:19/08/2019
(33) Name of priority country	:Singapore
(86) International Application No Filing Date	:PCT/SG2020/050482 :19/08/2020
(87) International Publication No	:WO 2021/034273
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KAHA PTE. LTD
Address of Applicant :81, Ayer Rajah Crescent, #02-42, Singapore 139967 Singapore
(72)**Name of Inventor :**
1)SHANTHARAM, Sudheendra

(57) Abstract :
The present invention provides method and system for tracking a user when location tracking is disabled or any location update is turned off due to accident, man-handling, crushing and other means, such user cannot be tracked by any means and location of the user becomes unknown. The present invention provides a smart safety network system for tracking a mobile computing device having no access to a global positioning system (GPS) in an emergency environment. The process involves performing scanning operations on the plurality of nearby mobile computing devices to detect the presence of the first mobile computing device within respective communication range.

No. of Pages : 17 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008741 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FLAME RETARDANT COMPOSITION, FLAME-RETARDANT RESIN COMPOSITION USING SAME, MOLDED ARTICLE AND METHOD FOR PRODUCING MOLDED ARTICLE

(51) International classification	:C08L0069000000, C09K0021040000, C08K0005521000, A61K0031438000, A61K0031425000
(31) Priority Document No	:2019-137987
(32) Priority Date	:26/07/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/027618 :16/07/2020
(87) International Publication No	:WO 2021/020140
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ADEKA CORPORATION
Address of Applicant :2-35, Higashiogu 7-chome, Arakawa-ku, Tokyo 1168554 Japan
(72)**Name of Inventor :**
1)NAKAMURA Michio
2)KOKURA Genta
3)OMORI Kohei
4)YOKOTA Yuri
5)YONEZAWA Yutaka

(57) Abstract :
A flame retardant composition according to the present invention is a phosphate-based flame retardant containing a (poly)phosphate, wherein if F (ppm) is the content of elemental iron and N (ppm) is the content of elemental sodium in the flame retardant composition as determined in accordance with the following procedure, F and N satisfy 8.0 × 10-4 = F/N = 20.0 and F = 21.0.

No. of Pages : 46 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008757 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BASE, CAMERA MODULE, AND ELECTRONIC DEVICE

(51) International classification	:H04N0005225000, H01L0023000000, G01N0021552000, G01J0001040000, G01J0001440000
(31) Priority Document No	:201921320024.X
(32) Priority Date	:14/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/109055 :14/08/2020
(87) International Publication No	:WO 2021/027905
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)OFILM GROUP CO., LTD.
Address of Applicant :Ofilm Science And Technology Park, Huafa Road Section Songbai Road, Gongming Street, Guangming New District Shenzhen, Guangdong 518106 China
2)NANCHANG OFILM OPTICAL-ELECTRONIC TECH CO., LTD.
(72)**Name of Inventor :**
1)MA, Zhongke
2)CHEN, Xiaofeng
3)SHEN, Chengzhe

(57) Abstract :
The present application relates to a base (10), a camera module (100), and an electronic device (1000). The base (10) is used for bearing a lens (20), and comprises: a substrate (1) connected to the lens (20), the substrate (1) being provided with a mounting hole (13); an optical sensing chip (2) provided in the mounting hole (13) and opposite to the lens (20), a gap (6) being provided between a side wall (21) of the optical sensing chip (2) and an inner wall (131) of the mounting hole (13); and a connection structure (3) provided in the gap (6) and connected to the optical sensing chip (2) and the substrate (1) respectively to fix the optical sensing chip (2) to the substrate (1).

No. of Pages : 12 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008758 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IMMUNOMODULATORY ANTIBODIES AND METHODS OF USE THEREOF

(51) International classification	:A61K0009000000, G01N0033569000, A61P0035020000, C07K0016280000, A61K0039000000
(31) Priority Document No	:62/876580
(32) Priority Date	:19/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042668 :17/07/2020
(87) International Publication No	:WO 2021/016128
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ONCORESPONSE, INC.
Address of Applicant :1124 Columbia Street, Suite 300 Seattle, Washington 98104 U.S.A.
(72)**Name of Inventor :**
1)PURI, Kamal D.
2)CHANDRASEKARAN, Siddarth
3)CONERLY, Melissa L.
4)SIMMONS, Randi M.
5)SMITH, Tyrel T.
6)BRANUM, Mark E.
7)PROBST, Peter

(57) Abstract :
Provided herein are antibodies and methods of use thereof. The antibodies as disclosed herein bind to CD163+ on cells, such as on macrophages. These antibodies can be used in methods of treatment, such as methods of treating cancer.

No. of Pages : 144 No. of Claims : 83

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008768 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS FOR SCREENING AND SUBSEQUENT PROCESSING OF SAMPLES TAKEN FROM NON-STERILE SITES

(51) International classification	:B01L0003000000, C12Q0001040000, G16B0020000000, G16Z0099000000, B41J0002045000
(31) Priority Document No	:62/889414
(32) Priority Date	:20/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047110 :20/08/2020
(87) International Publication No	:WO 2021/035009
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PATTERN BIOSCIENCE, INC.
Address of Applicant :9600 Great Hills Trail, Suite 160E Austin, Texas 78759 U.S.A.
(72)**Name of Inventor :**
1)ARAB, Nicolas
2)JOHNSON, Ross

(57) Abstract :
A method of analyzing a sample comprising one or more species of microorganisms can include generating first droplets such that each of one or more microorganisms of a first portion of the sample is encapsulated within one of the first droplets and, for each of one or more aliquots of a second portion of the sample, second droplets such that each of one or more microorganisms of the aliquot is encapsulated within one of the second droplets. First and second sets of data can be captured, the first set indicative of the identity and quantity of encapsulated microorganism(s) of the first portion of the sample and the second set indicative of a phenotypic response of encapsulated microorganism(s) of the aliquot(s) to one or more test reagents. A target species' phenotypic response to the test reagent(s) is determinable at least by referencing the second data set to the first data set.

No. of Pages : 24 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008769 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MICROFLUIDIC CHIPS INCLUDING A GUTTER TO FACILITATE LOADING THEREOF AND RELATED METHODS

(51) International classification	:B01L0003000000, B01F0003080000, F16K0031420000, B01F0005060000, B81B0001000000
(31) Priority Document No	:62/889420
(32) Priority Date	:20/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047184 :20/08/2020
(87) International Publication No	:WO 2021/035044
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PATTERN BIOSCIENCE, INC.
Address of Applicant :9600 Great Hills Trail, Suite 160E Austin, Texas 78759 U.S.A.
(72)**Name of Inventor :**
1)JOHNSON, Ross

(57) Abstract :
A microfluidic chip can comprise a body and a microfluidic network defined by the body. The network can include one or more inlet ports, a test volume, and one or more flow paths extending between the inlet port(s) and the test volume. Along each of the flow path(s), fluid is permitted to flow from one of the inlet port(s), through at least one droplet-generating region in which a minimum cross-sectional area of the flow path increases along the flow path, and to the test volume. The network can include a gutter disposed along at least a portion of a periphery of the test volume such that fluid from the flow path(s) is not permitted to flow into the gutter without flowing through the test volume, wherein, along the gutter, a depth of the gutter is at least 10% larger than the depth of the test volume at the periphery.

No. of Pages : 20 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008773 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENZYME INHIBITORS

(51) International classification	:A61K0031440200, C07D0413060000, C07D0417060000, C07D0239950000, C07D0471100000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/GB2019/052359 :21/08/2019
(87) International Publication No	:WO 2021/032936
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KALVISTA PHARMACEUTICALS LIMITED
Address of Applicant :Porton Science Park Bybrook Road Salisbury Porton Down Wiltshire SP4 0BF U.K.
(72)**Name of Inventor :**
1)EDWARDS, Hannah Joy
2)EVANS, David Michael
3)MAZZACANI, Alessandro
4)OBARA, Alicja Stela
5)CLARK, David Edward
6)GANCIA, Emanuela
7)PITTAWAY, Rachael
8)WRIGGLESWORTH, Joseph William

(57) Abstract :
The present invention provides compounds of formula (I) compositions comprising such compounds; the use of such compounds in therapy; and methods of treating patients with such compounds; wherein R1, R2, R3, R4, R5, R6, R7, R8, R9 and R10 are as defined herein.

No. of Pages : 103 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008774 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENZYME INHIBITORS

(51) International classification	:A61K0031455000, C07D0471040000, C07D0239950000, C07D0413060000, C07D0401140000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/GB2019/052358 :21/08/2019
(87) International Publication No	:WO 2021/032935
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KALVISTA PHARMACEUTICALS LIMITED
Address of Applicant :Porton Science Park Bybrook Road, Porton Down Salisbury Wiltshire SP4 0BF U.K.
(72)**Name of Inventor :**
1)CHILDS, Mitchell Lewis
2)DAVIE, Rebecca Louise
3)EDWARDS, Hannah Joy
4)EVANS, David Michael
5)HODGSON, Simon Teanby
6)MAZZACANI, Alessandro
7)CLARK, David Edward
8)HINCHLIFFE, Paul Stuart
9)BAKER, Thomas Matthew
10)SAMBROOK SMITH, Colin Peter
11)SMITH, Alun John
12)WRIGGLESWORTH, Joseph William
13)YANG, Xuezheng

(57) Abstract :
The present invention provides compounds of formula (I) or (Ia): compositions comprising such compounds; the use of such compounds in therapy; and methods of treating patients with such compounds; wherein A, B, n, R2, R3, R4, R5, and R6 are as defined herein.

No. of Pages : 223 No. of Claims : 33

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/02/2022

(21) Application No.202217008789 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AAV CARDIAC GENE THERAPY FOR CARDIOMYOPATHY IN HUMANS

(51) International classification	:A61K0048000000, C12N0015860000, C12N0015110000, G06K0007100000, A61K0038480000
(31) Priority Document No	:62/876540
(32) Priority Date	:19/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042663 :17/07/2020
(87) International Publication No	:WO 2021/016126
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UNIVERSITY OF FLORIDA RESEARCH FOUNDATION, INCORPORATED
Address of Applicant :223 Grinter Hall Gainesville, FL 32611 U.S.A.
(72)**Name of Inventor :**
1)SWEENEY, Hugh Lee

(57) Abstract :
The present disclosure is related to compositions and methods useful in treating heart conditions. The disclosed compositions and methods are based on gene therapies comprising a recombinant AAV vector for delivering two or more transgenes into the heart of a human subject, wherein the transgenes comprise an S100A1 protein and a cardiac Apoptosis Repressor with caspase recruitment Domain (cARC) apoptotic inhibitor. In various embodiments, the compositions and methods disclosed herein comprise vectors comprising S100A1 and/or cARC cDNA sequences that are codon-optimized for expression in humans. In some aspects, targeting multiple sources of one or more heart conditions can provide synergistic benefits during treatment.

No. of Pages : 48 No. of Claims : 35

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008827 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MOVING-BED PARTICLE HEAT EXCHANGER

(51) International classification	:A61F0007000000, F28D0001047000, F28D0007080000, A61F0007120000, F01D0009060000
(31) Priority Document No	:2019903064
(32) Priority Date	:22/08/2019
(33) Name of priority country	:Australia
(86) International Application No Filing Date	:PCT/AU2020/050874 :21/08/2020
(87) International Publication No	:WO 2021/030875
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION
Address of Applicant :Clunies Ross St Acton, Australian Capital Territory 2601 Australia
(72)**Name of Inventor :**
1)SOO TOO, Yen Chean
2)GARDNER, Wilson
3)KIM, Jin-Soo

(57) Abstract :
A particle heat exchanger comprising: a housing including an inlet located at the top of the housing, and an outlet located below the inlet, the housing configured to enclose a flow of heat transfer particles which flows downwardly from the inlet to the outlet within the housing; at least one heat transfer tube enclosed in the housing and in contact with the flow of heat transfer particles therein, each heat transfer tube extending substantially parallel to an axis extending between the inlet and outlet of the housing; and at least one divider located between the inlet and outlet of the housing, the at least one heat transfer tube extending through each divider, each divider including at least one opening configured to form at least one flow constriction in the flow of heat transfer particles between the inlet and outlet of the housing.

No. of Pages : 29 No. of Claims : 30

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008834 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DATA COLLECTOR IN AN ELECTRONIC DEVICE

(51) International classification	:F16M0013020000, G01S0007410000, G06F0016245500, G01N0027620000, G06K0009200000
(31) Priority Document No	:FR1909319
(32) Priority Date	:21/08/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/FR2020/051460 :12/08/2020
(87) International Publication No	:WO 2021/032919
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)IDEMIA IDENTITY & SECURITY FRANCE
Address of Applicant :2, Place Samuel de Champlain 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)DEL GIUDICE, Lauren, Marjorie
2)DUCLOS, Rémi, Louis, Marie
3)BIEULES, Pierrick

(57) Abstract :
The invention targets a collection method performed by a first device (DV1) comprising a first volatile memory (MR1), this first device interacting with a second device (DV2) comprising a second non-volatile memory (MR2), these memories comprising objects (OB) each forming an instance of a class of an object-oriented language. The method comprises analysing the objects (OB) by running through an object tree from the persistence roots; and upon detecting that the analysis is complete, collecting from the first and second memories to erase each object that was not analysed during said analysis. This analysis comprises in particular, for each object: identifying each reference pointing to another object; and defining a first or second type for each identified reference, this analysis continuing only along references of the first type.

No. of Pages : 40 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008867 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR IMPROVED LAP SHEAR STRENGTH AND DISPLACEMENT OF TWO-COMPONENT STRUCTURAL ADHESIVES

(51) International classification	:C09D0133060000, C23C0022830000, B05D0003000000, B05D0001280000, A01N0025280000
(31) Priority Document No	:62/890854
(32) Priority Date	:23/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/039060 :23/06/2020
(87) International Publication No	:WO 2021/040865
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PPG INDUSTRIES OHIO, INC.
Address of Applicant :3800 West 143rd Street Cleveland, Ohio 44111 U.S.A.
(72)**Name of Inventor :**
1)FORTMAN, David J.
2)POLLUM, JR., Marvin M.
3)KRILEY, Joseph P.
4)REARICK, Brian K.
5)FRENCH, Maria S.
6)BROWN-TSENG, Elizabeth S.
7)BOWLES, Steven E.
8)NAKAJIMA, Masayuki

(57) Abstract :
Disclosed are systems for treating a substrate comprising a deoxidizing composition and a coating composition. The deoxidizing composition comprises a Group IVA metal and/or a Group IVB metal and free fluoride, optionally may comprise a homopolymer or copolymer comprising a phosphorous-containing monomeric subunit, and has a pH of 1.0 to 3.0. The coating composition comprises first and second components and elastomeric particles. The first component comprises an epoxy-containing compound. The second component comprises a diamine and/or a polyamine comprising a cyclic ring. The diamine may chemically react with the epoxy-containing compound. The present invention is also directed to methods of making the compositions, methods of coating a substrate, and coated substrates.

No. of Pages : 67 No. of Claims : 34

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008868 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CLAD 2XXX-SERIES AEROSPACE PRODUCT

(51) International classification	:C22C0021080000, C22C0021020000, C22C0021100000, B23K0035280000, C22C0021160000
(31) Priority Document No	:19193108.8
(32) Priority Date	:22/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/IB2020/057081 :27/07/2020
(87) International Publication No	:WO 2021/033050
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ALERIS ROLLED PRODUCTS GERMANY GMBH
Address of Applicant :Carl-Spaeter-Straße 10 56070 Koblenz Germany
(72)**Name of Inventor :**
1)DAVIDKOV, Aleksandar Lozanov
2)BÜRGER, Achim
3)SPANGEL, Sabine Maria
4)MEYER, Philippe

(57) Abstract :
The invention relates to a rolled composite aerospace product comprising a 2XXX-series core layer and a 6XXX-series aluminium alloy clad layer coupled to at least one surface of the 2XXX-series core layer, wherein the 6XXX-series aluminium alloy comprises, in wt.%, Si 0.3% to 1.0%, Mg 0.3% to 1.1%, Mn 0.04% to 1.0%, Fe 0.03% to 0.4%, Cu up to 0.10%, Cr up to 0.25%, V up to 0.2%, Zr up to 0.2%, Zn up to 0.5%, Ti up to 0.15%, unavoidable impurities each 0.05%, total 0.15%, balance aluminium. The invention further relates to a method of manufacturing such a rolled composite aerospace product.

No. of Pages : 15 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008882 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CELL FOR STORING A SET OF PRODUCTS IN WHICH AN AIR FLOW THROUGH THE SET OF PRODUCTS IS IMPLEMENTED AND WHICH IS EQUIPPED WITH AN INFLATABLE SEALING DEVICE

(51) International classification	:F16J0015460000, E06B0007230000, B65B0051300000, A61B0017000000, B29C0063340000
(31) Priority Document No	:FR1910751
(32) Priority Date	:27/09/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/075717 :15/09/2020
(87) International Publication No	:WO 2021/058326
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FROMFROID
Address of Applicant :ROUTE DE QUEHEN 62360 ISQUES France
(72)**Name of Inventor :**
1)PAUPARDIN, M. Benoît

(57) Abstract :
The storage cell (1A) has ventilation means (4) which are able to create a rear/front air flow (A) or a front/rear air flow, an inflatable sealing device (7A) and inflation means for inflating the inflatable sealing device. The inflatable sealing device (7A) has an inflatable upper sealing element (70A) and at least one inflatable lateral sealing element (71A; 71B) which make it possible, in the inflated state, to directly or indirectly ensure sealing between the upper wall (12) of the cell and at least a part of the top face (2e) of a set (2) of products (20) positioned in the cell and sealing between at least one lateral wall (10 or 11) of the cell and at least a part of one of the lateral faces (2c or 2d) of this set (2) of products (20). The inflatable upper sealing element (70A) and the inflatable lateral sealing element (71A) delimit a single inflatable chamber (70a/71a), and the inflation means make it possible to inflate the inflatable upper sealing element (70A) and the inflatable lateral sealing element (71A) by blowing air into this single inflatable chamber (70a/71a).

No. of Pages : 21 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008940 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND DEVICE FOR BREAKING UP AN ELECTRICALLY CONDUCTIVE LIQUID

(51) International classification	:A61B0017320300, B26F0003000000, G02B0026000000, H01M0004139500, C21B0003060000
(31) Priority Document No	:10 2019 122 000.9
(32) Priority Date	:15/08/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/072636 :12/08/2020
(87) International Publication No	:WO 2021/028477
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ALD VACUUM TECHNOLOGIES GMBH
Address of Applicant :Otto-von-Guericke-Platz 1 63457 Hanau Germany
(72)**Name of Inventor :**
1)FRANZ, Henrik
2)SPITANS, Sergejs

(57) Abstract :
The invention relates to a method for breaking up an electrically conductive liquid, in particular a molten jet, which comprises the steps of: Providing the electrically conductive liquid, which moves in a first direction (12) in the form of a liquid jet (10); and generating high-frequency electromagnetic travelling fields surrounding the liquid jet (10), which travel in the first direction (12) and accelerate the liquid jet (10) in the first direction (12), whereby the liquid jet (10) is atomized.

No. of Pages : 12 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008946 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR THE PREPARATION OF ETHANOL-CONTAINING BEVERAGES USING MICROORGANISMS

(51) International classification	:C12G0003060000, C12G0003070000, C12G0003040000, A23L0029256000, B32B0027200000
(31) Priority Document No	:62/876845
(32) Priority Date	:22/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043056 :22/07/2020
(87) International Publication No	:WO 2021/016344
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NEXT CENTURY SPIRITS, LLC
Address of Applicant :8601 Six Forks Rd., Ste. 260 Forum I Raleigh, North Carolina 27615 U.S.A.
(72)**Name of Inventor :**
1)PAWLAK, Joel J.

(57) Abstract :
The present inventive concept relates generally to simulating the barrel aging or finishing process of alcohol-containing products in a rapid manner using various microorganisms to impart flavors and aromas during the aging or finishing process. Products and methods used in the process of aging or finishing the alcohol-containing products are also provided.

No. of Pages : 22 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008948 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ANTI-MS4A4A ANTIBODIES AND METHODS OF USE THEREOF

(51) International classification	:A61K0039000000, C07K0016280000, A61P0025280000, A61K0038130000, C07K0016220000
(31) Priority Document No	:62/881187
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044335 :30/07/2020
(87) International Publication No	:WO 2021/022083
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ALECTOR LLC
Address of Applicant :131 Oyster Point Boulevard, Suite 600 South San Francisco, California 94080 U.S.A.
(72)**Name of Inventor :**
1)SUN, Jeonghoon
2)HO, Wei-Hsien
3)ALHAWAGRI, Muhammad A.
4)KONG, Philip Ling
5)RHINN, Herve
6)LONG, Hua
7)SRINIVASAN, Karpagam
8)MITRA, Ananya
9)BERMINGHAM, Daniel P.
10)HEGER, Klaus-Dieter
11)SALAZAR, Santiago Viveros
12)CIGNARELLA, Francesca
13)TASSI, Ilaria
14)SCHWABE, Tina
15)YEE, Angie Grace
16)ROSENTHAL, Arnon

(57) Abstract :
The present disclosure is generally directed to compositions that include antibodies, e.g., monoclonal antibodies, humanized antibodies and antibody fragments, that specifically bind a MS4A4A polypeptide, e.g., a mammalian MS4A4A or human MS4A4A, and use of such compositions in preventing, reducing risk, or treating an individual in need thereof.

No. of Pages : 218 No. of Claims : 85

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008951 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR THE QUANTITATIVE DETERMINATION OF AN ACTUAL OPERATING STATE-DEPENDENT VARIABLE OF A FAN, IN PARTICULAR OF A PRESSURE CHANGE OR PRESSURE INCREASE, AND FAN

(51) International classification	:G05B0023020000, A23G0003340000, G06N0003080000, H04M0003510000, G01F0001660000
(31) Priority Document No	:10 2019 212 325.2
(32) Priority Date	:17/08/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/DE2020/200054 :02/07/2020
(87) International Publication No	:WO 2021/032255
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ZIEHL-ABEGG SE
Address of Applicant :Heinz-Ziehl-Straße 74653 Künzelsau Germany
(72)**Name of Inventor :**
1)LOERCHER, Frieder
2)ANGELIS, Walter

(57) Abstract :
The invention relates to a method for quantitatively determining an actual operating-state-dependent variable, for example the pressure increase of a fan, wherein, an actual operating-state-dependent variable is determined via its rotational speed using known volume or mass flows of the fan.

No. of Pages : 12 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022
(21) Application No.202217008952 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : STORAGE CONTAINER

(51) International classification	:A61F0009000000, B65D0051160000, A01N0001020000, B65D0077040000, G07D0011400000
(31) Priority Document No	:2019-156415
(32) Priority Date	:29/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/031428 :20/08/2020
(87) International Publication No	:WO 2021/039575
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NAGASAKI UNIVERSITY
Address of Applicant :1-14, Bunkyomachi, Nagasaki-shi, Nagasaki 8528521 Japan
(72)**Name of Inventor :**
1)UEMATSU Masafumi
2)KITAOKA Takashi

(57) Abstract :
A storage container is provided for storing a cornea specimen, wherein the endothelium and the epithelium of the cornea can be immersed and stored in different storage liquids. The storage container 1A comprises: a specimen support part 3A that has a first cornea exposure part 31a and a second cornea exposure part 31b that expose a cornea part 101, a sclera outer edge part 102 being supported on the outer peripheral sides of the first cornea exposure part 31A and the second cornea exposure part 31B; a first chamber 20a in which is exposed the endothelial side of the cornea part 101 of the cornea specimen 100 in which the sclera outer edge part 102 is supported by the specimen support part 3A, a first storage liquid 60a being contained in the first chamber 20a; and a second chamber 20b that is demarcated from the first chamber 20a by the specimen support part 3A, the epithelial side of the cornea part 101 of the cornea specimen 100 that is supported by the specimen support part 3A being exposed in the second chamber 20b, and a second storage liquid 60b that differs from the first storage liquid 60a being contained in the second chamber 20b, the storage container 1A being configured so that the first storage liquid 60a and the second storage liquid 60b do not circulate between the first chamber 20a and the second chamber 20b.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008954 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR PRODUCING CARBON-NANOTUBE-BLENDED AGGREGATES

(51) International classification	:C08K0003040000, B82Y0030000000, D21H0021180000, A61K0009000000, C09D0007400000
(31) Priority Document No	:2019-149429
(32) Priority Date	:16/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/030741 :13/08/2020
(87) International Publication No	:WO 2021/033614
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MITSUBISHI CORPORATION
Address of Applicant :3-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 1008086 Japan
(72)**Name of Inventor :**
1)YAMAMOTO Hirofumi

(57) Abstract :
This method for producing carbon-nanotube-blended aggregates comprises (1) a step for preparing an aqueous solution of a water-soluble polymer having a concentration of 0.005-3.0 mass%, (2) a step for impregnating carbon nanotubes with the aqueous solution of the water-soluble polymer in a proportion of 400-1000 parts by mass of per 100 parts by mass of carbon nanotubes to prepare a wet aggregate, (3) a step for shear crushing the wet aggregate to obtain aggregates of a crushed product, and (4) a step for drying the aggregates of the crushed product and obtaining carbon-nanotube-blended aggregates that include the water-soluble polymer.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008955 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS TO DETECT DIRT LEVEL OF FILTERS

(51) International classification	:G05B0023020000, B01D0046000000, G06T0007130000, B01D0035143000, G01N0015080000
(31) Priority Document No	:16/555978
(32) Priority Date	:29/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047087 :20/08/2020
(87) International Publication No	:WO 2021/041134
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SIEMENS INDUSTRY, INC.
Address of Applicant :100 Technology Drive Alpharetta, Georgia 30005 U.S.A.
(72)**Name of Inventor :**
1)SONG, Zhen
2)CONTE, Gregory
3)WANG, Qinpeng

(57) Abstract :
A system and method identifies a current filter dirty level. The system includes sensors (308, 310, 322, 324, 1808, 1810, 1822, 1824), coupled to a controller, (104) to collecting differential pressure sensor data and flow data associated with a flow of materials through a filter (306, 320, 1806, 1820). The controller (104) applies a filter filtered data set to a portion of the differential pressure sensor data and flow data and a second filtered data set to the first filtered data set to further smooth the first filtered data set. The controller (104) further applies an edge detection filter to the second filtered data set resulting in edge detection filtered data set and determines a threshold for filter replacement and an optimal filter replacement date with the edge detection filtered data set and flow data.

No. of Pages : 18 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008956 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND DEVICE FOR DRY TREATMENT OF METAL SURFACES BY MEANS OF ELECTRICALLY ACTIVE SOLID PARTICLES

(51) International classification	:B82Y0030000000, B82Y0010000000, A61N0001200000, B23K0101360000, C21D0007060000
(31) Priority Document No	:P201930716
(32) Priority Date	:01/08/2019
(33) Name of priority country	:Spain
(86) International Application No Filing Date	:PCT/ES2020/070499 :31/07/2020
(87) International Publication No	:WO 2021/019121
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DRYLYTE, S.L.
Address of Applicant :C/.Caracas nº 13-15, Nave 6 08030 BARCELONA Spain
2)STEROS GPA INNOVATIVE, S.L.
(72)**Name of Inventor :**
1)SOTO HERNANDEZ, Marc
2)SARSANEDAS GIMPERA, Marc
3)ROMAGOSA CALATAYUD, Pau
4)PEREZ PLANAS, Miguel Francisco
5)GALINDO SESÉ, Edurne
6)FONTELLES BATALLA, Laia

(57) Abstract :
The invention relates to a method and device for dry treatment of metal surfaces (1) by means of electrically active solid particles (9), which comprises a step of placing the particles (9) in contact with the electrode (3) of an electrical source (2), a step of projecting the particles (9) onto the metal surface to be treated, and a step of transmitting electrical charge from the particles to the metal surface to be treated. The transmission of electricity between the electrical source (2) and the metal surface (1) during the projection step is preferably by net charge of the particles (9), or by electrical conductivity by contact or by electrical conductivity by means of voltage arcs. The current applied to the electrode is preferably a direct current or a current containing positive and negative sections. Preferably in the medium between the particles (9) there is a conductive element which increases the conductivity between the particles by means of voltage arcs. Preferably, the method involves a step of using abrasive particles simultaneously or consecutively with the electrically active particles.

No. of Pages : 24 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022
(21) Application No.202217008957 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BINDER COMPOSITION FOR FORMING MOLD

(51) International classification	:B22C0001220000, H01M0004620000, H01M0004130000, C04B0035634000, C08G0073020000
(31) Priority Document No	:2019-163583
(32) Priority Date	:09/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/026873 :09/07/2020
(87) International Publication No	:WO 2021/049150
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KAO CORPORATION
Address of Applicant :14-10, Nihonbashi Kayabacho 1-chome, Chuo-ku, Tokyo 1038210 Japan
(72)**Name of Inventor :**
1)KANZAWA,Tomofumi
2)ISHIYAMA,Shogo
3)YAMATANI,Makito
4)NAKAHATA,Yu

(57) Abstract :
The present invention is a binder composition for forming a mold, said binder composition containing a phenolic resin and a cyclic ketal compound having a hydroxyl group and 5 or more carbon atoms. The present invention is able to provide a binder composition for forming a mold, said binder composition being capable of enhancing the degradability of a mold, namely being capable of decreasing the residual mold pressure strength, thereby improving the productivity of the flask removal work after casting.

No. of Pages : 58 No. of Claims : 29

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008962 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PEPTIDES AS INHIBITORS OF FIBROTIC MATRIX ACCUMULATION

(51) International classification	:A61K0038000000, C07K0007060000, A61K0047640000, A61K0038170000, C07K0014470000
(31) Priority Document No	:19189468.2
(32) Priority Date	:31/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/071319 :28/07/2020
(87) International Publication No	:WO 2021/018923
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MAX-PLANCK-GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.
Address of Applicant :Hofgartenstrasse 8 80539 Munich Germany
(72)**Name of Inventor :**
1)NAKCHBANDI, Inaam
2)HAMELMANN, Stefan
3)UEBEL, Stephan

(57) Abstract :
The present invention relates to peptides that inhibit overproduction and/or excess accumulation of extracellular matrix in an organ or tissue. The inventive peptides have the general sequence Xa-Leu-Gln-Gly-Xb (SEQ ID NO: 1), wherein Xa is selected from Pro-Gly, Gly and Ac-Gly and Xb is selected from Glu and Glu-NH2, and are able of inhibit overproduction and excess accumulation of extracellular matrix in an organ or tissue both as linear peptides and as cyclic peptides. In particular the peptides disclosed herein can be used for treating fibrotic conditions characterized by an excess accumulation of extracellular matrix such as liver fibrosis, cirrhosis of the liver, lung fibrosis, chronic respiratory failure, cardiac fibrosis, ischemic heart disease, heart failure, diabetic nephropathy, glomerulonephritis, myelofibrosis, and various types of cancers such as breast cancer, uterus cancer, prostate cancer, pancreas cancer, colon cancer, skin cancer, blood cell cancers, cancers of the central nervous system, fibroids, fibroma, fibroadenomas and fibrosarcomas.

No. of Pages : 46 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217008972 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DAMPENERS FOR SPORTING EQUIPMENT AND SPORTING EQUIPMENT INCLUDING THE SAME

(51) International classification	:A63B0060540000, F41B0005140000, A43B0013180000, C08L0023220000, B01D0035300000
(31) Priority Document No	:62/877028
(32) Priority Date	:22/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043128 :22/07/2020
(87) International Publication No	:WO 2021/016386
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)VT ADVANTEC, LLC
Address of Applicant :410 S. Michigan Avenue # 403 Chicago, IL 60605 U.S.A.
(72)**Name of Inventor :**
1)CONDEZ, Larry, C.
2)LONG, John, Michael

(57) Abstract :
This disclosure relates to dampeners for sporting equipment wherein the dampeners dampen or attenuate energy, such as vibrations or sound. The dampeners include polymeric compositions having butyl rubber polymers and, optionally, resins based on phenol-formaldehyde. The dampeners can be used in sporting equipment that requires attenuation and absorption of impact, vibration, and/or sound, and the dampeners may provide cushioning to the user.

No. of Pages : 23 No. of Claims : 69

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009033 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HYBRID TIRE CORD AND METHOD FOR MANUFACTURING THEREOF

(51) International classification	:B60C0009000000, D02G0003480000, D02G0003040000, D02G0003280000, H01L0023000000
(31) Priority Document No	:10-2019-0121169
(32) Priority Date	:30/09/2019
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:PCT/KR2020/012881 :23/09/2020
(87) International Publication No	:WO 2021/066385
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KOLON INDUSTRIES, INC.
Address of Applicant :110, Magokdong-ro, Gangseo-gu, Seoul 07793 Republic of Korea
(72)**Name of Inventor :**
1)LEE, Min Ho
2)JEON, Ok Hwa
3)YIM, Jongha

(57) Abstract :
The present invention relates to a method for manufacturing a hybrid cord that uses a difference in fineness so as to enable easier manufacturing of a hybrid cord in a form covered with aramid, and has uniform physical properties, thereby improving tire performance.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022
(21) Application No.202217009064 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RUBBER-MODIFIED BITUMENS, METHOD OF PRODUCTION AND USE THEREOF IN ASPHALT

(51) International classification	:C08L0095000000, C09D0195000000, C10C0003000000, C10C0003020000, C10C0003040000
(31) Priority Document No	:19189591.1
(32) Priority Date	:01/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/071277 :28/07/2020
(87) International Publication No	:WO 2021/018892
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LANXESS DEUTSCHLAND GMBH
Address of Applicant :Kennedyplatz 1 50569 Köln Germany
(72)**Name of Inventor :**
1)KLEIN, Thomas
2)ROSSRUCKER, Thomas
3)HORSTMANN, Sandra
4)KUSTERER, Svenja

(57) Abstract :
The invention relates to new rubber-modified bitumens, improved methods for producing rubber-modified bitumen using vulcanized rubber, and its use in asphalt.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009066 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WATER-BASED BARRIER ADHESIVE

(51) International classification	:C08G0018080000, C09J0007290000, C09J0123220000, C08G0018670000, C08J0003030000
(31) Priority Document No	:10201908115Y
(32) Priority Date	:03/09/2019
(33) Name of priority country	:Singapore
(86) International Application No Filing Date	:PCT/EP2020/074526 :03/09/2020
(87) International Publication No	:WO 2021/043860
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)THAI POLYETHYLENE CO., LTD.
Address of Applicant :1 Siam Cement Road Bangsue 10800 Bangkok Thailand
(72)**Name of Inventor :**
1)NERANON, Kitjanit
2)SAENDEE, Phutsadee
3)PORNSUNTHORNTAWEE, Orathai
4)JARUMANEEROJ, Chatchai
5)CHEEVASRIRUNGRUANG, Watcharee

(57) Abstract :
The invention relates to a water-based barrier adhesive comprising: a polyurethane; at least one water-soluble polymer, wherein the water-soluble polymer comprises at least one hydroxyl group; and water; a barrier film comprising the same; a method for preparing the same; and the use thereof in food packaging.

No. of Pages : 13 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009069 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GAS BARRIER LAYERED BODY, AND PACKAGING MATERIAL AND TUBE CONTAINER USING SAME

(51) International classification	:B32B0027300000, B32B0007020000, B32B0027080000, C22C0038120000, C08J0007040000
(31) Priority Document No	:PCT/JP2019/029680
(32) Priority Date	:29/07/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/028532 :22/07/2020
(87) International Publication No	:WO 2021/020298
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TOPPAN INC.
Address of Applicant :5-1, Taito 1-chome, Taito-ku, Tokyo 1100016 Japan
(72)**Name of Inventor :**
1)NISHIKAWA Takeshi
2)TANAKA Ayumi
3)FUKUGAMI Miki

(57) Abstract :
This disclosure relates to a gas barrier layered body provided with, in the stated order: a substrate layer that contains a polyolefin-based resin; a first polyvinyl alcohol-based resin layer; a thin-film layer containing silicon or aluminum' and a second polyvinyl alcohol-based resin layer. The logarithmic decrement of the first polyvinyl alcohol-based resin layer, measured by a rigid-body pendulum type physical tester, is 0.20 or less at 100°C and 0.30 or less at 125°C; and the indentation hardness, obtained by a nanoindenter, of the second polyvinyl alcohol-based resin layer is 0.5-1.0 GPa.

No. of Pages : 28 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009070 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : STERNAL ASCENDER APPARATUS

(51) International classification	:B66B0011020000, E04H0017160000, E21B0019060000, F24S0030000000, H01Q0001240000
(31) Priority Document No	:62/889690
(32) Priority Date	:21/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047440 :21/08/2020
(87) International Publication No	:WO 2021/035151
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LSI SOLUTIONS, INC.
Address of Applicant :7796 Victor-Mendon Road Victor, NY 14564 U.S.A.
(72)**Name of Inventor :**
1)SAUER, MD Jude, S.
2)DECLERCK, Matthew, David
3)MARTELLARO, Angelo, John
4)BOSECK, Benjamin, James
5)WRONA, Matthew

(57) Abstract :
A sternal elevator apparatus is disclosed. The sternal elevator may include a panel, a support beam traversing the panel, and a post coupled to a proximal end of the panel. The apparatus may also include an indicator handle coupled to the sternal elevator, an actuator drive pivotably coupled to the indicator handle, and a housing movably coupled to the actuator drive. The sternal elevator apparatus may have an actuator drive incorporating a linear rack. The housing further may include a cylindrical gear where the cylindrical gear is engaged with the linear rack.

No. of Pages : 12 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009071 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : OPTICAL WAVEGUIDE

(51) International classification	:G02B0027010000, G02B0006020000, G02B0005180000, H01S0005120000, G02B0027420000
(31) Priority Document No	:1911982.5
(32) Priority Date	:21/08/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051994 :20/08/2020
(87) International Publication No	:WO 2021/032982
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BAE SYSTEMS PLC
Address of Applicant :6 Carlton Gardens London SW1Y 5AD U.K.
(72)**Name of Inventor :**
1)MASON, Stephen

(57) Abstract :
An optical waveguide for a head up display is disclosed. The optical waveguide is configured to provide pupil expansion in two dimensions and having an input end and an output end and a first axis substantially parallel to the direction of propagation of light in the waveguide and substantially parallel with a direction from the input end to the output end. The optical waveguide comprising: an input region at the input end;a beam splitter configured to expand light received from the input region; a symmetrical diffraction grating comprising complementary first and second grating portions, wherein the second grating portion is substantially symmetrical to the first grating portion along a line of symmetry that is substantially parallel to the first axis. Light received at the symmetrical diffraction grating from the beam splitter is configured to be diffracted by the symmetrical diffraction grating towards the line of symmetry by the first grating portion or the second grating portion. Light received at the first grating portion from the second waveguide portion is configured to be diffracted out of the waveguide at the output end. Light received at the second grating portion from the first grating portion is configured to be diffracted out of the waveguide at the output end.

No. of Pages : 7 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009094 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR PRODUCING A CURVED LAMINATED GLAZING

(51) International classification	:B32B0017100000, B32B0037120000, C03C0017360000, C03C0017230000, B32B0037140000
(31) Priority Document No	:FR1910774
(32) Priority Date	:30/09/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/077393 :30/09/2020
(87) International Publication No	:WO 2021/064035
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAINT-GOBAIN GLASS FRANCE
Address of Applicant :Tour Saint-Gobain 12 Place de l'Iris 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)JAMART, Juliette
2)DUMOTIER, Leila

(57) Abstract :
The subject matter of the invention is a method for producing a curved laminated glazing. The method comprises depositing an enamel coating on a portion of a first face (11) of a first glass sheet (1) so as to create at least one enamelled area (12) and at least one non-enamelled area (14, 16), depositing a sacrificial layer (22) on one portion, called the sacrificial area, of a first face (21) of a second glass sheet (2), simultaneously bending the first and second glass sheet (1, 2), the sacrificial area (22) being arranged at least in line with at least one portion of an enamelled area (12), removing the sacrificial layer (22), either during or after the step of bending, and laminating the first (1) and second (2) glass sheet by means of a thermoplastic interlayer (3).

No. of Pages : 16 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009099 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : POLYMERIC ANION-CONDUCTING MEMBRANE

(51) International classification	:C07D0471100000, C01B0013020000, A61K0031202000, A61Q0005060000, C08G0061120000
(31) Priority Document No	:19187560.8
(32) Priority Date	:22/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/070153 :16/07/2020
(87) International Publication No	:WO 2021/013694
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)EVONIK OPERATIONS GMBH
Address of Applicant :Rellinghauser Strasse 1-11 45128 Essen Germany
(72)**Name of Inventor :**
1)CONRADI, Oliver
2)MALJUSCH, Artjom
3)RÖGL, Harald
4)LUPPI, Gianluigi

(57) Abstract :
The present invention provides compounds, especially polymeric compounds, having preferably at least one spiro or piperidine structural unit, a process for preparation thereof and the use thereof as anion conducting membrane.

No. of Pages : 15 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009114 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GRAIN-ORIENTED ELECTROMAGNETIC STEEL PLATE AND PRODUCTION METHOD THEREFOR

(51) International classification	:C21D0008120000, C22C0038000000, C22C0038040000, C22C0038020000, H01F0001160000
(31) Priority Document No	:2019-163264
(32) Priority Date	:06/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/033662 :04/09/2020
(87) International Publication No	:WO 2021/045212
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)JFE STEEL CORPORATION
Address of Applicant :2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo 1000011 Japan
(72)**Name of Inventor :**
1)SHINGAKI Yukihiro
2)SHIMOYAMA Yusuke
3)HARADA Akifumi

(57) Abstract :
Provided is a grain-oriented electromagnetic steel sheet capable of obtaining excellent magnetic characteristics which are stable throughout the entire length of a coil. The grain-oriented electromagnetic steel sheet contains by mass%, 0.005% or less of C, 2.0-4.5% of Si, and 0.01-0.5% of Mn, contains by mass ppm, 20 ppm or less of N, less than 50 ppm of each of Se, Te, and O, less than 30 ppm of S, and less than 40 ppm of acid-soluble Al, and further contains less than 30 ppm of Ti in which acid-soluble Ti is included in an amount of 5-25 ppm, with the remainder comprising Fe and inevitable impurities, wherein the grain-oriented electromagnetic steel sheet has 0.05/mm2 or more of precipitates having a particle diameter of 200 nm or more and containing Ti and N.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009138 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENZYME INHIBITORS

(51) International classification	:C07D0471040000, A61K0031440200, C07D0233600000, A61P0035000000, C07D0409120000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/GB2019/052356 :21/08/2019
(87) International Publication No	:WO 2021/032933
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KALVISTA PHARMACEUTICALS LIMITED
Address of Applicant :Porton Science Park Bybrook Road Porton Down Salisbury Wiltshire SP4 0BF U.K.
(72)**Name of Inventor :**
1)DAVIE, Rebecca Louise
2)EDWARDS, Hannah Joy
3)EVANS, David Michael
4)HODGSON, Simon Teanby
5)MARSH, Sally Louise
6)MAZZACANI, Alessandro
7)ROOKER, David Philip
8)STOCKS, Michael John
9)CRIDLAND, Andrew Peter
10)GANCIA, Emanuela
11)HAMBLIN, Julie Nicole
12)HINCHLIFFE, Paul Stuart
13)LEVANTO, Stefano
14)PANCHAL, Terence Aaron
15)MILLER, Iain Robert

(57) Abstract :
The present invention provides compounds of formula (I): Formula (I) compositions comprising such compounds; the use of such compounds in therapy; and methods of treating patients with such compounds; wherein A, Y, n, R1, R2A, R2B, R3 and 1 are as defined herein.

No. of Pages : 272 No. of Claims : 50

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009139 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENZYME INHIBITORS

(51) International classification	:A61K0031455000, C07D0471040000, C07D0239950000, C07D0413060000, C07D0401140000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/GB2019/052357 :21/08/2019
(87) International Publication No	:WO 2021/032934
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KALVISTA PHARMACEUTICALS LIMITED
Address of Applicant :Porton Science Park Bybrook Road Porton Down Salisbury Wiltshire SP4 0BF U.K.
(72)**Name of Inventor :**
1)DAVIE, Rebecca Louise
2)EDWARDS, Hannah Joy
3)EVANS, David Michael
4)HODGSON, Simon Teanby
5)CRIDLAND, Andrew Peter
6)GANCIA, Emanuela
7)GOLDSMITH, Erica Lee
8)HINCHLIFFE, Paul Stuart
9)JANDU, Karamjit Singh
10)SMITH, Alun John

(57) Abstract :
The present invention provides compounds of formula (I) compositions comprising such compounds; the use of such compounds in therapy; and methods of treating patients with such compounds; wherein A, B, and, n, are as defined herein.

No. of Pages : 228 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009140 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ACCESS CONTROL DEVICE AND PEDESTRIAN GATE FOR SAME

(51) International classification	:G07C0009100000, G07C0009270000, E04B0002740000, E06B0011080000, F16K0027060000
(31) Priority Document No	:20 2019 104 045.9
(32) Priority Date	:22/07/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/068149 :26/06/2020
(87) International Publication No	:WO 2021/013474
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MAGNETIC AUTOCONTROL GMBH
Address of Applicant :Grienmatt 20 79650 Schopfheim Germany
(72)**Name of Inventor :**
1)RAUER, Timo
2)STEIERT, Martin

(57) Abstract :
The application relates to a pedestrian gate (3) for an access control device, having a blocking element (7) and having an actuating element (8), wherein the blocking element (7) is fastened to the actuating element (8) and is pivotable by means of said actuating element (8) about a vertical axis of rotation (11) between a blocking position and an access position. The blocking element (7) is, in a vertical projection, formed so as to run substantially rectilinearly and, here, defines a vertical blocking plane (12) which does not encompass the axis of rotation (11).

No. of Pages : 11 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009141 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PASSAGE CONTROL DEVICE

(51) International classification	:E06B0011080000, G07C0009100000, H05K0007140000, G07C0009150000, G07C0009220000
(31) Priority Document No	:20 2019 104 046.7
(32) Priority Date	:22/07/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/068147 :26/06/2020
(87) International Publication No	:WO 2021/013473
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MAGNETIC AUTOCONTROL GMBH
Address of Applicant :Grienmatt 20 79650 Schopfheim Germany
(72)**Name of Inventor :**
1)RAUER, Timo
2)STEIERT, Martin

(57) Abstract :
The invention relates to a passage control device having a corridor (1) and at least one person barrier (3), which, by means of at least one blocking element (5) which is arranged in the region of the corridor (1) and can be moved between a blocking position and a passage position, releases or blocks the corridor (1) for a passage, and having lateral boundaries (2) arranged right and left of the corridor (1). The lateral boundaries (2) have a module rail (6) that is close to the ground and is provided with receptacles for functional elements and/or functional modules of the access control device, more particularly with specifically adapted receptacles for functional elements and/or functional modules of the access control device, preferably in a predefined grid.

No. of Pages : 17 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009142 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD OF OBTAINING MITOCHONDRIA FROM CELLS AND OBTAINED MITOCHONDRIA

(51) International classification	:B01J0023883000, B01J0021120000, A23L0033115000, B01J0023240000, B01J0037000000
(31) Priority Document No	:2019-136283
(32) Priority Date	:24/07/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/029597 :22/07/2020
(87) International Publication No	:WO 2021/015298
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LUCA SCIENCE INC.
Address of Applicant :3-8-3, Nihonbashi Honcho, Chuo-ku, Tokyo 1030023 Japan
(72)**Name of Inventor :**
1)OHTA, Yoshihiro
2)OKUTANI, Arima
3)TAKAHASHI, Momoka
4)SUGANUMA, Masashi
5)KAWASE, Yoshie

(57) Abstract :
The present disclosure relates to methods of obtaining mitochondria from cells, mitochondria obtained by such methods, and uses of mitochondria obtained by such methods.

No. of Pages : 58 No. of Claims : 79

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009143 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR TREATING SOLID TUMORS

(51) International classification	:A61K0039000000, A61K0038000000, C07K0014470000, A61K0045060000, H05H0013040000
(31) Priority Document No	:62/880614
(32) Priority Date	:30/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044327 :30/07/2020
(87) International Publication No	:WO 2021/022081
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BREAKBIO CORP.
Address of Applicant :225 Central Park West, Apt 823 New York, NY 10024 U.S.A.
(72)**Name of Inventor :**
1)SRIKRISHNA, Devabhaktuni
2)DE SOUZA, Roy

(57) Abstract :
Solid cancerous tumors are treated by administration of an antigen presenting cell agent, a T-cell activating neoantigen vaccine, and an immunosuppression inhibitor. Another aspect of the invention is a method for treating solid cancerous tumors (SCT) in a subject, by administering an antigen presenting cell agent; a T-cell activating vaccine; and an immunosuppression inhibitor.

No. of Pages : 49 No. of Claims : 47

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009166 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR PREPARING CIRCUIT BOARD MATERIAL LAYER STRUCTURE, AND PRODUCT THEREOF

(51) International classification	:H05K0003000000, H01L0023498000, H05K0003460000, H05K0001020000, H05K0003380000
(31) Priority Document No	:201910784391.3
(32) Priority Date	:23/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2019/112808 :23/10/2019
(87) International Publication No	:WO 2021/035919
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LI, Longkai
Address of Applicant :56, Group 2, Lihua Road Changling Town, Wanzhou District Chongqing 404020 China
(72)**Name of Inventor :**
1)LI, Longkai

(57) Abstract :
A method for preparing a circuit board material layer structure, comprising the following steps: (1) combining a film and a copper layer to form an FCCL single-sided board; and (2) laying a semi-cured functional material layer on the back surface of the FCCL single-sided board, wherein the semi-cured functional material layer is an MPI film, an LCP film, a TFP film, a PTFE film, a copper ion migration prevention film, an LDK high-frequency functional adhesive, a copper ion migration prevention adhesive, or a mixture of an LDK high-frequency functional adhesive and a copper ion migration prevention adhesive, so as to form a circuit board material layer structure. The circuit board material layer structure prepared by the above method has high-frequency characteristics and/or copper ion migration resistance, and can be used as a whole structure. During the manufacturing process of the circuit board, the circuit board material layer structure can be used as a material in circuit board manufacturing to manufacture different circuit board structures, thereby significantly facilitating subsequent manufacturing of the circuit board and simplifying the manufacturing process.

No. of Pages : 22 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009167 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HIGH-FREQUENCY CIRCUIT BOARD LAYER STRUCTURE AND METHOD FOR PREPARING SAME

(51) International classification	:H05K0003460000, H05K0001020000, H05K0001110000, H05K0003060000, H05K0003420000
(31) Priority Document No	:201910785103.6
(32) Priority Date	:23/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2019/112807 :23/10/2019
(87) International Publication No	:WO 2021/035918
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LI, LongKai
Address of Applicant :56, Group 2, Lihua Road Changling Town, Wanzhou District Chongqing 404020 China
(72)**Name of Inventor :**
1)LI, LongKai

(57) Abstract :
A method for preparing a high-frequency circuit board layer structure. The method comprises the following steps: (1) coating a synthetic liquid TFP film on a cured PI thin film; (2) sending same to a tunnel oven for segmental baking to form a semi-cured TFP film on the front of the cured PI thin film; and (3) hot-pressing copper foil on the semi-cured TFP film to obtain a high-frequency circuit board layer structure. The prepared high-frequency circuit board layer structure has the performance of high-speed transmission of high-frequency signals, and can adapt to current high-frequency and high-speed trends from wireless networks to terminal application and is particularly applicable to 5G technology products; and same can be used as a material for manufacturing a circuit board to manufacture a circuit board structure such as a single-layer circuit board, a multilayer flexible circuit board and a multilayer rigid-flex board, thereby greatly facilitating subsequent manufacturing of the circuit board.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009168 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR COATING AND MOLDING NOVEL MATERIAL LAYER STRUCTURE OF HIGH-FREQUENCY CIRCUIT BOARD AND PRODUCT THEREOF

(51) International classification	:H05K0003460000, H05K0003380000, H05K0003000000, H05K0001030000, H05K0001020000
(31) Priority Document No	:201910784381.X
(32) Priority Date	:23/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2019/112802 :23/10/2019
(87) International Publication No	:WO 2021/035916
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LI, LongKai
Address of Applicant :56, Group 2, Lihua Road Changling Town, Wanzhou District Chongqing 404020 China
(72)**Name of Inventor :**
1)LI, LongKai

(57) Abstract :
A method for coating and molding a novel material layer structure of a high-frequency circuit board, comprising the following steps: (1) coating a synthetic liquid thin film on a copper foil; (2) sending same into a tunnel oven for baking and forming a cured thin film on the copper foil to obtain a single panel; (3) coating a layer of a synthetic liquid high-frequency material layer on the cured thin film; and (4) sending same into the tunnel oven for baking, and the synthetic liquid high-frequency material layer becoming a semi-cured high-frequency material layer (3) to obtain the novel material layer structure of the high-frequency circuit board. The novel material layer structure of the high-frequency circuit board prepared by using the described method has the performance of transmitting high-frequency signals at high speeds, may adapt to the current high-frequency and high-speed trend from wireless networks to terminal applications, and is especially suitable for novel 5G technology products; and may be used as a material for fabricating circuit boards such as single-layer circuit boards, multilayer flexible circuit boards and multilayer flexible and rigid combined boards, thereby making circuit board fabrication very convenient and simplifying the process.

No. of Pages : 21 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009169 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MANUFACTURING METHOD FOR MULTI-LAYER FLEXIBLE CIRCUIT BOARD, AND PRODUCT THEREOF

(51) International classification	:H05K0003460000, H05K0003280000, H05K0001110000, H05K0003000000, H05K0003060000
(31) Priority Document No	:201910784378.8
(32) Priority Date	:23/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2019/112798 :23/10/2019
(87) International Publication No	:WO 2021/035914
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LI, LongKai
Address of Applicant :56 Group 2, Lihua Road, Changling Town, Wanzhou District Chongqing 404020 China
(72)**Name of Inventor :**
1)LI, LongKai

(57) Abstract :
A manufacturing method for a multi-layer flexible circuit board and a multi-layer flexible circuit board manufactured using the method. The manufacturing method comprises the following steps: manufacturing a double-sided FPC flexible board (1); manufacturing novel material layer structures (2, 3); hot-pressing at least one set of novel material layer structure (2, 3) on a circuit on the upper surface and/or lower surface of the double-side FPC flexible board (1); and forming a protective layer (4) on the circuit of the outmost novel material layer structure (2, 3) and/or an exposed circuit of the double-sided FPC flexible circuit (1) to obtain a multi-layer flexible circuit board. The manufacturing method features simplified procedures, convenience, and high production efficiency. The manufactured multi-layer flexible circuit board not only significantly simplifies the novel material layer structures (2, 3) and reduces the overall thickness, but also has a function of transmitting high-frequency signals at a high speed, and thus is specifically suitable for novel 5G technological products. A protection and resistance function is provided for copper ion migration phenomena during electrification between circuits, thereby ensuring safe and normal operation of the circuits.

No. of Pages : 25 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022
(21) Application No.202217009171 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR SYNTHESIZING N-SUBSTITUTED PHENYL-5-HYDROXYMETHYL-2-OXAZOLIDINONE

(51) International classification	:C07D0413140000, C07C0029151000, C07D0295096000, C01B0025455000, C07D0303480000
(31) Priority Document No	:201910771167.0
(32) Priority Date	:20/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/074576 :10/02/2020
(87) International Publication No	:WO 2021/031533
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HANGZHOU DIKE TECHNOLOGIES CO., LTD.
Address of Applicant :Room 1001, 1003, 1005, 1006, 1007, 1008, 1009, 1011 and 1013, Block F, Building 1, No.1378 Wenyi West Road, Cangqian Street, Yuhang District, Hangzhou, Zhejiang 311100 China
(72)**Name of Inventor :**
1)YU, Dihu
2)WANG, Quan
3)BAO, Lei
4)HOU, Dapeng

(57) Abstract :
Disclosed in the present invention is a method for synthesizing N-substituted phenyl-5-hydroxymethyl-2-oxazolidinone, wherein the synthesis method involves: 3-R 2-4-R 1-phenylamine and epoxy chloropropane being used as raw materials to carry out the reaction, and the N-substituted phenyl-5-hydroxymethyl-2-oxazolidinone being prepared, under alkaline conditions and a CO 2 atmosphere, from the resulting reaction product, wherein R 1 is a morpholine group, a morpholin-3-one group or piperazine and a derivative group thereof, and R 2 is a halogen, hydrogen or lower alkyl. The synthesis method provided by the present invention has the advantages of few steps, simple operation, inexpensive and easily available raw materials, mild reaction conditions, a high product yield, etc., and is particularly suitable for the industrial production of the intermediate of the antibiotic linezolid and the intermediate of the anti-thrombotic drug rivaroxaban.

No. of Pages : 15 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009180 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DOSING REGIMENS FOR ORAL COMPLEMENT FACTOR D INHIBITORS

(51) International classification	:C07D0209420000, A61P0009000000, A61P0021040000, A61K0031416000, C07D0231560000
(31) Priority Document No	:62/881225
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044037 :29/07/2020
(87) International Publication No	:WO 2021/021909
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BIOCRYST PHARMACEUTICALS, INC.
Address of Applicant :4505 Emperor Blvd. Suite 200 Durham, NC 27703 U.S.A.
(72)**Name of Inventor :**
1)BABU, Yarlagadda, S.
2)SHERIDAN, William, P.

(57) Abstract :
Disclosed are compounds and pharmaceutically acceptable salts and prodrugs thereof, which are inhibitors of the complement system. Also provided are oral dosage forms comprising such a compound, salt, or prodrug. Also disclosed are methods of using the compounds, salts, and prodrugs, and oral dosage forms thereof, in the treatment or prevention of a disease or condition characterized by aberrant complement system activity (e.g., paroxysmal nocturnal hemoglobinuria).

No. of Pages : 62 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009196 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SUGAR-REDUCED FOOD CREAM COMPOSITION USING NATIVE PEA STARCH

(51) International classification	:A61K0009000000, A23P0030400000, A23L0009100000, A23G0003460000, A23C0013120000
(31) Priority Document No	:16/561125
(32) Priority Date	:05/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/EP2020/074780 :04/09/2020
(87) International Publication No	:WO 2021/043988
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ROQUETTE FRERES
Address of Applicant :1 rue de la Haute Loge 62136 LESTREM France
(72)**Name of Inventor :**
1)KANTT, Carlos

(57) Abstract :
The invention is related to a sugar-reduced food cream composition comprising fat, sugar and starch, wherein the starch is native starch having an average particle size between 20 µm and 30 µm, preferably between 22 µm and 28 µm, even more preferably between 23 µm and 26 µm, with a D90 smaller than 40 µm, preferably smaller than 36 µm. The invention also relates to a method of preparation of a sugar-reduced food cream composition comprising the steps of: selecting a recipe of a food cream composition comprising fat and sugar, replacing between 25% to 40%, preferably 25% to 35%, more preferably about 30% by weight of the total sugar content of said food cream composition by native starch having an average particle size between 20 µm and 30 µm, preferably between 22 µm and 28 µm, even more preferably between 23 µm and 26 µm, with a D90 smaller than 40 µm, preferably smaller than 36 µm.

No. of Pages : 14 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009197 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DISC BRAKE

(51) International classification	:F16D0065097000, F16D0065095000, F16D0055228000, F16D0055227000, F16D0127020000
(31) Priority Document No	:2019-155490
(32) Priority Date	:28/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/030748 :13/08/2020
(87) International Publication No	:WO 2021/039413
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HITACHI ASTEMO, LTD.
Address of Applicant :2520, Takaba, Hitachinaka-shi, Ibaraki 3128503 Japan
(72)**Name of Inventor :**
1)INOUE Hayuru
2)HASHIMOTO Kumi

(57) Abstract :
This disc brake is provided with an attachment member having a pad guide part, a pair of friction pads, a caliper, and a pad spring. The pad guide part has a recessed part in an area inside, in the disc radial direction, of a bottom part of the pad guide part, the recessed part being depressed in a disc rotation direction with respect to a bottom surface of an area outside in the disc radial direction. The pad spring has: a guide part that is provided to be able to abut on a wall surface outside, in the disc radial direction, of the pad guide part and on the bottom surface, and guides the movement of a protruding part along the disc axial direction; and a fitting part that protrudes from the guide part in the disc rotation direction, and is elastically fit with the recessed part.

No. of Pages : 42 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009199 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD OF SEPARATING DIFFERENT CONSTITUENTS OF A CONCRETE FOR DECONSTRUCTION

(51) International classification	:B29B0017020000, B03B0009060000, H01M0004620000, G16H0010600000, C22B0007000000
(31) Priority Document No	:FR1909630
(32) Priority Date	:02/09/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/074369 :01/09/2020
(87) International Publication No	:WO 2021/043775
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)FIVES FCB
Address of Applicant :50 Rue de Ticléni 59650 VILLENEUVE D'ASCQ France
(72)**Name of Inventor :**
1)CORDONNIER, Alain
2)BOUDOT, François
3)FRUCHART, Alain
4)GUIMARD, Yannick
5)PORTAL, Jérôme

(57) Abstract :
The invention relates to a method of separating different constituents of a fine fraction that is produced in a prior method for separating a concrete for deconstruction.

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009200 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SOLID FORMS OF N-TERT-BUTYL-4[[2-(5-CHLORO-2-HYDROXY-PHNEYL)ACETYL]AMINO]PYRIDINE-2-CARBOXAMIDE

(51) International classification	:C07D0471040000, C07D0403120000, A61K0031506000, C07D0501000000, C07F0009650600
(31) Priority Document No	:1910664.0
(32) Priority Date	:25/07/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051779 :24/07/2020
(87) International Publication No	:WO 2021/014167
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TMEM16A LIMITED
Address of Applicant :6 Falcon Way Shire Park Welwyn Garden City, England AL7 1TW U.K.
(72)**Name of Inventor :**
1)COLLINGWOOD, Stephen
2)MELLING, Robert

(57) Abstract :
The invention relates to novel forms of N-tert-Butyl-4-[[2-(5-chloro-2-hydroxy- phenyl)acetyl]amino]pyridine-2-carboxamide (Compound 1). In particular, the invention relates to the Form A and Form B crystalline polymorphs and the amorphous form.

No. of Pages : 72 No. of Claims : 36

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009201 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PARVOVIRUS ANTIBODIES FOR VETERINARY USE

(51) International classification	:A61K0039000000, C07K0016120000, A61K0039120000, A61K0039230000, C12N0007000000
(31) Priority Document No	:62/880650
(32) Priority Date	:30/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044302 :30/07/2020
(87) International Publication No	:WO 2021/022067
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KINDRED BIOSCIENCES, INC.
Address of Applicant :1555 Bayshore Highway, Suite 200 Burlingame, CA 94010 U.S.A.
(72)**Name of Inventor :**
1)ZHAN, Hangjun
2)NGUYEN, Lam
3)RATCLIFF, Ellen
4)CHIN, Richard
5)LI, Shyr Jiann

(57) Abstract :
Provided are various embodiments relating to parvovirus antibodies, including caninized, felinized, and chimeric antibodies, that bind to canine and/or feline parvovirus, for example, having improved expression characteristics. In various embodiments, the parvovirus antibodies have ADCC, ADCP, and/or CDC effector functions. In various embodiments, such monoclonal parvovirus antibodies can be used in methods to prevent and/or treat parvoviral infection in subjects, such as dogs and cats. For example, the parvovirus antibodies provided may be used to provide passive immunity against infection with a canine or feline parvovirus.

No. of Pages : 90 No. of Claims : 82

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009202 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THIOL-ACRYLATE ELASTOMERS FOR 3D PRINTING

(51) International classification	:B33Y0010000000, B33Y0070000000, C09D0004000000, C08G0018480000, C09D0011107000
(31) Priority Document No	:62/877832
(32) Priority Date	:23/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043326 :23/07/2020
(87) International Publication No	:WO 2021/016481
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ADAPTIVE 3D TECHNOLOGIES, LLC
Address of Applicant :17217 Waterview Parkway Suite 1.202 Dallas, Texas 75252 U.S.A.
(72)**Name of Inventor :**
1)LUND, Benjamin R.
2)HUFFSTETLER, Jesse

(57) Abstract :
The present disclosure relates to thiol-acrylate photopolymerizable resin compositions. The resin compositions may be used for additive manufacturing. One embodiment of the invention includes a photopolymerizable resin for additive manufacturing, the resin comprising: an acrylate oligomer; a methacrylate monomer; and a thiol wherein the resin may be configured to react by exposure to light to form a cured material. The resin may further comprise one or more oligomeric additives. For example, polyether oligomeric additives such as polytetrahydrofuran.

No. of Pages : 111 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009203 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WEB ELEMENT REDISCOVERY SYSTEM AND METHOD

(51) International classification	:G06F0016957000, H03M0007300000, G06F0016958000, G06F0040140000, G06F0040106000
(31) Priority Document No	:16/541565
(32) Priority Date	:15/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/046199 :13/08/2020
(87) International Publication No	:WO 2021/030600
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)KUMAR, Anil
Address of Applicant :400 N. Michigan Avenue, Ste. 1300 Chicago, IL 60611 U.S.A.
(72)**Name of Inventor :**
1)KUMAR, Anil
2)KUMAR, Anil
3)NAIR, Rohith

(57) Abstract :
A system and method of identifying an element within a target web page that has been changed is disclosed. A pre-region longest matching segment of the pre-region that matches a pre-region segment of a pre-region of a source web page is identified within a pre-region of the target page. The source web page is the target page before the element was changed. A post-region longest matching segment of the post-region that matches a post-region segment of the post-region of a source web page is identified within a post-region of the target page. The web element of the target page is identified as the changed web element, which is between the pre-region longest matching segment and the post-region longest matching segment in response to the pre-region longest matching segment being determined to be within a pre-defined distance of the post-region longest matching segment.

No. of Pages : 76 No. of Claims : 44

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009204 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INDOOR UNIT FOR AIR CONDITIONER

(51) International classification	:F24F0011300000, F24F0001004700, F24F0001000700, F24F0011650000, F24F0013150000
(31) Priority Document No	:2019-168563
(32) Priority Date	:17/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/034723 :14/09/2020
(87) International Publication No	:WO 2021/054287
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DAIKIN INDUSTRIES, LTD.
Address of Applicant :Umeda Center Building, 4-12, Nakazaki-nishi 2-chome, Kita-ku, Osaka-shi, Osaka 5308323 Japan
(72)**Name of Inventor :**
1)FUJITA Hiroki
2)TAKENAKA Kei
3)HAIKAWA Tomoyuki
4)NUNO Hayato

(57) Abstract :
An indoor unit (10) for an air conditioner, configured such that the direction of airflow emitted from an outlet (15) can be adjusted. The indoor unit (10) for an air conditioner comprises a control unit (40) that switches between a normal mode and a wide mode. The control unit (40) switches to the wide mode when an air conditioning load exceeds a prescribed value and, in the wide mode, expands the range reached by the airflow in the air conditioned space, at least vertically, compared to when in the normal mode.

No. of Pages : 40 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009209 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GOLF BALL-LIKE MICROPARTICLES FOR USE IN THE TREATMENT AND PREVENTION OF PULMONARY DISEASES

(51) International classification	:A61K0009000000, A61M0015000000, A61K0009500000, A61M0011000000, A61K0009140000
(31) Priority Document No	:BE2019/5603
(32) Priority Date	:10/09/2019
(33) Name of priority country	:Belgium
(86) International Application No Filing Date	:PCT/EP2020/075416 :10/09/2020
(87) International Publication No	:WO 2021/048322
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)AQUILON PHARMACEUTICALS
Address of Applicant :Rue Porte de Lorette 76 4600 Visé Belgium
(72)**Name of Inventor :**
1)MAES, Paul
2)CATALDO, Didier
3)BIGAZZI, William
4)EVRARD, Brigitte

(57) Abstract :
The present invention relates to a golf ball-like microparticles obtained by atomization of nanosuspensions of nanoparticles or solutions for dry powder inhalers for use in the treatment and prevention of pulmonary diseases.

No. of Pages : 30 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009210 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ROLLER WITH A SENSOR

(51) International classification	:B02C0025000000, B02C0004320000, B02C0004280000, B02C0004020000, F16C0013000000
(31) Priority Document No	:19193455.3
(32) Priority Date	:23/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/072253 :07/08/2020
(87) International Publication No	:WO 2021/037525
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BÜHLER AG
Address of Applicant :Gupfenstrasse 5 9240 Uzwil Switzerland
(72)**Name of Inventor :**
1)NEFF, Martin
2)LUQUIN, Marcos

(57) Abstract :
The present invention relates to a grinder roller (1) for use in a grinder roller pair, in particular a grain roller pair, comprising at least one sensor (2) for the detection of measured values which characterize a state of the grinder roller, wherein the sensor (2) is arranged in a receiving opening (1a) of the grinder roller (1), at least one data transmitter (3) for the contactless transmission of the measured values of the at least one sensor (2) to a data receiver, wherein the sensor (2) is enclosed in the receiving opening (1a) by means of a cap (4) made from ceramic material. Furthermore, the present invention relates to a corresponding grinder roller pair, to a production plant which comprises a grinder roller pair of this type, to a corresponding cap (4), to a kit consisting of a corresponding cap (4) and a fastening device (5), and to a method for operating a product processing plant of this type.

No. of Pages : 21 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009211 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MULTIMERIC BISPECIFIC ANTI-CD123 BINDING MOLECULES AND USES THEREOF

(51) International classification	:C07K0016280000, A61P0035000000, C07K0016460000, A61K0039395000, C12N0015900000
(31) Priority Document No	:62/888475
(32) Priority Date	:17/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/046335 :14/08/2020
(87) International Publication No	:WO 2021/034646
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)IGM BIOSCIENCES, INC.
Address of Applicant :325 East Middlefield Road Mountain View, California 94043 U.S.A.
(72)**Name of Inventor :**
1)AMOURY, Manal
2)SINCLAIR, Angus
3)KEYT, Bruce

(57) Abstract :
This disclosure provides multivalent, bispecific, anti-CD123 binding molecule comprising a modified J-chain that specifically binds to an immune effector cell. Also provided are polynucleotides encoding the binding molecule or subunits thereof and vectors and host cell comprising said polynucleotides. This disclosure further provides methods for producing and/or using a multivalent, bispecific, anti-CD123 binding molecule comprising a modified J-chain that specifically binds to an immune effector cell.

No. of Pages : 87 No. of Claims : 60

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009214 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CONTROL DEVICE FOR HOT ROLLING LINE

(51) International classification	:B21B0037760000, B21B0045020000, B21B0037740000, G05B0013040000, B21B0001260000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/JP2020/031494 :20/08/2020
(87) International Publication No	:WO 2022/038751
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEMS CORPORATION
Address of Applicant :3-1-1, Kyobashi, Chuo-ku, Tokyo 1040031 Japan
(72)**Name of Inventor :**
1)SUZUKI, Atsushi
2)SANO, Mitsuhiko

(57) Abstract :
The present invention provides a control device for a hot rolling line, which is capable of increasing accuracy at a time of performing feedforward control for a cooling amount of a rolled material by a cooling device. A control device for a hot rolling line is provided with: a storage unit for storing information relating to a prediction error of a passage speed of a rolled material in a cooling device to be used for a temperature model to predict a temperature of the rolled material in the hot rolling line in which the rolled material rolled by a finish rolling machine is cooled by the cooling device by pouring water, and then wound up by a winding coiler; and a learning unit for calculating, each time the rolled material rolled by the finish rolling machine is cooled by the cooling device by pouring water, and then wound up by the winding coiler, a learning value of the prediction error of a passage speed of the rolled material on the basis of an actual value of the passage speed of the rolled material, and updating information relating to the prediction error of the passage speed of the rolled material stored in the storage unit on the basis of the learning value of the prediction error of the passage speed of the rolled material.

No. of Pages : 41 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009216 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD FOR MAKING CONCRETE ADMIXTURES CONTAINING CARBON NANOPARTICLES

(51) International classification	:C04B0040000000, C08K0003220000, C01B0032174000, H01M0010052500, H01M0010056700
(31) Priority Document No	:62/890158
(32) Priority Date	:22/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047092 :20/08/2020
(87) International Publication No	:WO 2021/034994
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)EDEN INNOVATIONS LTD.
Address of Applicant :Level 15 197 St. Georges Terrace Perth, WA 60 Australia
(72)**Name of Inventor :**
1)LARSEN, Allan, Godsk
2)FULTON, Justin, L.
3)HULBERT, Dustin, Marion
4)SCHMITT, Gregory, Evan
5)SHIMON, Clint

(57) Abstract :
A method for making an admixture for concrete includes the steps of providing a carbon nanomaterial comprised of carbon nanoparticles and wetting and dispersing the carbon nanomaterial in a liquid organic solvent/compound mixture comprised of amine based compounds configured to de-agglomerate and uniformly disperse the carbon nanoparticles. The method also includes the step of selecting the organic/solvent compound mixture to perform the wetting and dispersing step and to also perform at least one additional function in a particular type of concrete. An admixture for making concrete comprises a suspension of uniformly dispersed carbon nanoparticles having a predetermined percentage range by mass of the admixture in an organic solvent/compound mixture comprising an amine based compound having a predetermined percentage range by mass of the organic solvent/compound mixture.

No. of Pages : 11 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022

(21) Application No.202217009217 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : HYDRAULIC CONTROL UNIT, BRAKE SYSTEM, AND SADDLE-TYPE VEHICLE

(51) International classification	:H05K0005020000, B60R0016023000, H05K0007140000, H05K0005000000, A61H0033000000
(31) Priority Document No	:2019-156226
(32) Priority Date	:29/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/IB2020/057683 :14/08/2020
(87) International Publication No	:WO 2021/038359
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ROBERT BOSCH GMBH
Address of Applicant :Postfach 30 02 20 70442 Stuttgart Germany
(72)**Name of Inventor :**
1)NAKANO, Ryoji

(57) Abstract :
Provided is a hydraulic control unit that can be made smaller. A hydraulic control unit (1) of a brake system installed in a saddle-type vehicle comprises a housing (40) in which a circuit board (31) is housed. The housing (40) includes: a main body part (41) in which is formed an opening (433) in a region facing the circuit board (31); a lid (48) that covers the opening (433) and is affixed to the main body part (41); and a lid fixing part (50) that is provided inside a space surrounded by the main body part (41) and the lid (48), and that fixes the lid (48) to the main body part (41). The lid fixing part (50) includes: an engaged part (51) held by one of the main body part (41) and the lid (48); and an engaging part (55) that is held by the other of the main body part (41) and the lid (48), and that engages with the engaged part (51).

No. of Pages : 39 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/02/2022
(21) Application No.202217009219 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMMUNICATION METHOD AND APPARATUS

(51) International classification	:H04W0072040000, H04L0005000000, H04L0027260000, H04W0048160000, H01Q0021000000
(31) Priority Document No	:201910749410.9
(32) Priority Date	:14/08/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/109367 :14/08/2020
(87) International Publication No	:WO 2021/027947
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HUAWEI TECHNOLOGIES CO., LTD.
Address of Applicant :Huawei Administration Building, Bantian, Longgang District Shenzhen, Guangdong 518129 China
(72)**Name of Inventor :**
1)GAO, Fei
2)JIAO, Shurong
3)MA, Ruixiang
4)HUA, Meng

(57) Abstract :
The present application relates to the technical field of communications, and disclosed are a communication method and apparatus. The method comprises: according to configuration information sent by a network-side device, a terminal-side device determines the positions of a first sub-time unit and a second sub-time unit for monitoring a downlink control channel; and a monitoring capability corresponding to the first sub-time unit is determined according to a parameter corresponding to the first sub-time unit, wherein the parameter corresponding to the first sub-time unit comprises at least one of the following: a first time domain interval between the starting position of the first sub-time unit and the starting position of the second sub-time unit, the time domain length of the first sub-time unit, and a second time domain interval between the first sub-time unit and the second sub-time unit. By using the described method, the terminal-side device may determine the monitoring capability corresponding to the first sub-time unit, so that a PDCCH on the first sub-time unit may be monitored according to the monitoring capability corresponding to the first sub-time unit.

No. of Pages : 48 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009251 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM AND METHOD FOR QUANTUM DATA BUFFERING

(51) International classification	:G06N0010000000, B82Y0010000000, G02F0001350000, H04B0010700000, H04N0021234000
(31) Priority Document No	:62/907645
(32) Priority Date	:29/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/051982 :22/09/2020
(87) International Publication No	:WO 2021/061634
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BRUCE, John, A.
Address of Applicant :1103 Mahan Drive Madison, AL 35758 U.S.A.
(72)**Name of Inventor :**
1)BRUCE, John, A.

(57) Abstract :
A quantum data buffering system includes a data processor connected to a photon path quantum data buffer, a quantum mechanical elements source, a double slit filter, a non-linear optical crystal, a spontaneous parametric down converter and a Glan-Thompson prism. An output channel includes a data encoding sensor, qubits storage and single photon records storage. An input channel, includes a data decoding sensor and single photon records storage with path information.

No. of Pages : 7 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009264 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR IMPROVED LAP SHEAR STRENGTH AND DISPLACEMENT OF TWO-COMPONENT STRUCTURAL ADHESIVES

(51) International classification	:C09D0133060000, C09D0167000000, B01J0020200000, B05D0001280000, B05D0003000000
(31) Priority Document No	:62/890911
(32) Priority Date	:23/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/039142 :23/06/2020
(87) International Publication No	:WO 2021/040868
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PPG INDUSTRIES OHIO, INC.
Address of Applicant :3800 West 143rd Street Cleveland, Ohio 44111 U.S.A.
(72)**Name of Inventor :**
1)KRILEY, Joseph P.
2)POLLUM, JR., Marvin M.
3)FORTMAN, David J.
4)REARICK, Brian K.
5)NAKAJIMA, Masayuki
6)BROWN-TSENG, Elizabeh S.
7)BOWLES, Steven E.
8)FRENCH, Maria S.

(57) Abstract :
Disclosed are systems for treating a substrate comprising a deoxidizing composition and a coating composition. The deoxidizing composition comprises a Group IVA metal and/or a Group IVB metal and free fluoride, optionally may comprise a homopolymer or copolymer comprising a phosphorous-containing monomeric subunit, and has a pH of 1.0 to 3.0. The coating composition comprises first and second components and elastomeric particles. The first component comprises an epoxy-containing compound (E1) and/or an epoxide-functional adduct (E2). The second component comprises a diamine and/or a polyamine comprising a cyclic ring (A2) and/or an amine-functional adduct (A3). The present invention is also directed to methods of making the compositions, methods of coating a substrate, and coated substrates.

No. of Pages : 67 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009265 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THRESHOLD-TRIGGERED TRACER PARTICLES

(51) International classification	:G01N0033520000, A61K0049000000, A61K0051040000, B82Y0005000000, A61F0002320000
(31) Priority Document No	:19194587.2
(32) Priority Date	:30/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/074096 :28/08/2020
(87) International Publication No	:WO 2021/038054
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PATENTPOOL INNOVATIONS MANAGEMENT GMBH
Address of Applicant :Tal 34 80331 München Germany
(72)**Name of Inventor :**
1)SCHIMMEL, Thomas
2)BERSON KAPLAN, Jonathan
3)RUDOLPH, Bastian

(57) Abstract :
The present invention relates to a threshold-triggered tracer particle having at least a reference function and a reporting function as well as to a composition comprising the same. In addition, the present invention relates to a method of quantifying a porous medium with said composition for detecting physical, chemical or biochemical parameters of the porous medium. Further, the present invention also relates to several uses of said threshold-triggered tracer particles.

No. of Pages : 49 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009267 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : THERAPEUTIC FORMULATIONS AND USES THEREOF

(51) International classification	:A61K0031000000, A61K0047320000, A61K0031519000, A61K0009140000, A23L0035000000
(31) Priority Document No	:62/904162
(32) Priority Date	:23/09/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/AU2020/050132 :17/02/2020
(87) International Publication No	:WO 2021/056048
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BIONOMICS LIMITED
Address of Applicant :200 Greenhill Road Eastwood, South Australia 5063 Australia
(72)**Name of Inventor :**
1)PAUL, Dharam
2)CROSSMAN, Julia
3)DOOLIN, Elizabeth
4)REYNOLDS, Tom
5)WU, Xiangming
6)MILLAN, Jeff
7)STUMPFIG, Thomas
8)DOWNING, Kristie

(57) Abstract :
This invention relates to formulations of compound (I) (BNC210), an allosteric modulator of the a7 -nicotinic receptor with non-sedative anxiolytic effects; specifically, solid dispersions, methods of manufacture thereof, and therapeutic methods and uses in the treatment of diseases of the central nervous system thereof.

No. of Pages : 43 No. of Claims : 28

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009272 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BICYCLIC CX3CR1 RECEPTOR AGONISTS

(51) International classification	:C07D0413140000, C07D0417140000, C07D0403120000, C07K0016280000, C07D0451020000
(31) Priority Document No	:62/877660
(32) Priority Date	:23/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043258 :23/07/2020
(87) International Publication No	:WO 2021/016449
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM
Address of Applicant :210 West 7th Street Austin, Texas 78701 U.S.A.
2)AXXAM S.P.A.
(72)**Name of Inventor :**
1)PEVARELLO, Paolo
2)RAY, William
3)HAMBY, Mary
4)LIGHTFOOT, Yaima Luzardo
5)JONES, Philip
6)THOMAS, Russell
7)LIBERATI, Chiara
8)TORINO, Domenica
9)CUSANO, Valentina
10)PISCITELLI, Francesco
11)YOUSIF, Ali
12)BOVOLENTA, Silvia

(57) Abstract :
Disclosed herein are novel cycloalka[b]heteroaryl compounds having CX3CR1/ fractalkine receptor (CX3CR1) agonistic properties, pharmaceutical compositions comprising these compounds, chemical processes for preparing these compounds and their use in the treatment or prophylaxis of diseases associated with CX3CR1 receptor activity in animals, in particular humans.

No. of Pages : 121 No. of Claims : 41

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009283 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NONAQUEOUS ELECTROLYTE SOLUTION AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY

(51) International classification	:H01M0010056700, H01M0010052500, H01M0010056900, H01M0004131000, H01M0010056800
(31) Priority Document No	:2019-167451
(32) Priority Date	:13/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/034583 :11/09/2020
(87) International Publication No	:WO 2021/049648
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ASAHI KASEI KABUSHIKI KAISHA
Address of Applicant :1-1-2 Yurakucho, Chiyoda-ku, Tokyo 1000006 Japan
(72)**Name of Inventor :**
1)KAMINE, Hirokazu
2)MATSUOKA, Naoki
3)ITO, Makoto
4)ZHANG, Xun

(57) Abstract :
The present invention provides a nonaqueous electrolyte solution which contains: a nonaqueous solvent containing acetonitrile and vinylene carbonate; and a compound represented by general formula (1) R1-A-R2 (wherein A represents a divalent group that has a structure represented by one of formulae (1-2) to (1-5); and each of R1 and R2 independently represents an aryl group, an alkyl group which may be substituted by a halogen atom, while having from 1 to 4 carbon atoms, an alkyl group, a vinylidene group which may be substituted by a halogen atom, or an aryl group which may be substituted by a halogen atom; or alternatively, R1 and R2 may combine with each other and form, together with A, a ring structure that may have an unsaturated bond). With respect to this nonaqueous electrolyte solution, the total content of the vinylene carbonate and the compound represented by general formula (1) is not less than 0.1% by volume but less than 10% by volume relative to the total amount of the nonaqueous solvent; and the content of the vinylene carbonate is lower than the content of the compound represented by general formula (1).

No. of Pages : 142 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009304 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FOOD VENDING MACHINE AND FOOD VENDING METHOD USING THE SAME

(51) International classification	:G07F0017000000, G07F0009100000, G07F0009020000, G06Q0010080000, G07F0011700000
(31) Priority Document No	:62/877503
(32) Priority Date	:23/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043028 :22/07/2020
(87) International Publication No	:WO 2021/016326
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)YO-KAI EXPRESS INC.
Address of Applicant :3501 Breakwater Ct Hayward, CA 94545 U.S.A.
(72)**Name of Inventor :**
1)LIN, Chih Hung

(57) Abstract :
A food vending machine and a food vending method are provided. The food vending machine includes a storage device, a movement device, a delivery device and a heating device. The storage device is configured to store at least one food item. The movement device is provided corresponding to the storage device, and is configured to fetch the at least one food item from the storage device and move the at least one food item. The delivery device is provided corresponding to the movement device, and includes at least one delivery portion. The at least one delivery portion includes a placement board. The movement device is configured to move and place the at least one food item on the placement board. The heating device includes a steam portion, a hot water portion and at least one injection member.

No. of Pages : 25 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022
(21) Application No.202217009315 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD AND PROCESSING UNIT FOR PERFORMING TASKS THROUGH MASTER SLAVE ROTATION

(51) International classification	:G06F0009500000, G06F0011140000, G06F0009380000, H04W0048160000, H04W0084200000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/EP2019/072246 :20/08/2019
(87) International Publication No	:WO 2021/032287
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NOKIA SOLUTIONS AND NETWORKS OY
Address of Applicant :Karakaari 7 02610 Espoo Finland
(72)**Name of Inventor :**
1)DEBURCHGRAEVE, Wouter

(57) Abstract :
The present subject matter relates to a method comprising: acquiring a master role by a processing unit of a multi-processor system, executing by the processing unit a master function part of a set of tasks : comprising searching an available processing unit of the multi-processor system; wherein in case an available processing unit is found, controlling the found processing unit to perform a slave function part of the set of tasks, and in case no available processing unit is found, executing by the processing unit the slave function part of the set of tasks, wherein the master function comprises a master to slave switching function for releasing the master role and the slave function comprises a slave to master switching function for acquiring the master role.

No. of Pages : 26 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009316 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ON DEMAND HYDROGEN FROM AMMONIA

(51) International classification	:C01B0003040000, B01J0019240000, C01C0003020000, B01J0008040000, C01B0003380000
(31) Priority Document No	:PA 2019 01146
(32) Priority Date	:01/10/2019
(33) Name of priority country	:Denmark
(86) International Application No Filing Date	:PCT/EP2020/076704 :24/09/2020
(87) International Publication No	:WO 2021/063795
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HALDOR TOPSØE A/S
Address of Applicant :Haldor Topsøes Allé 1 2800 Kgs. Lyngby Denmark
(72)**Name of Inventor :**
1)MORTENSEN, Peter Mølgaard
2)LARSEN, Kasper Emil
3)AASBERG-PETERSEN, Kim
4)KLEIN, Robert

(57) Abstract :
A reactor system and a process for carrying out the ammonia cracking reaction of a feed gas comprising ammonia to hydrogen are provided, where the heat for the endothermic ammonia cracking reaction is provided by resistance heating.

No. of Pages : 41 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009317 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INCREASED EMISSION COLLECTION EFFICIENCY IN INTEGRATED OPTICAL DEVICES

(51) International classification	:G01N0021640000, B82Y0020000000, B01L0007000000, G01N0033483000, G02B0006120000
(31) Priority Document No	:62/884395
(32) Priority Date	:08/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/045101 :06/08/2020
(87) International Publication No	:WO 2021/026291
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)QUANTUM-SI INCORPORATED
Address of Applicant :530 Old Whitfield Street Guilford, CT 06437 U.S.A.
(72)**Name of Inventor :**
1)KABIRI, Ali
2)SHEN, Bing
3)SCHMID, Gerard
4)BEACH, James
5)PRESTON, Kyle
6)HOSALI, Sharath

(57) Abstract :
Apparatus and methods for improving optical signal collection in an integrated device are described. A microdisk (1-605) can be formed in an integrated device and increase collection and/or concentration of radiation incident on the microdisk (1-605) and re-radiated by the microdisk (1-605). An example integrated device that can include a microdisk (1-605) may be used for analyte detection and/or analysis. Such an integrated device may include a plurality of pixels, each having a reaction chamber (1-130) for receiving a sample to be analyzed, an optical microdisk (1-605), and an optical sensor (1-122) configured to detect optical emission from the reaction chamber (1-130). The microdisk (1-605) can comprise a dielectric material having a first index of refraction that is embedded in one or more surrounding materials (1-610) having one or more different refractive index values.

No. of Pages : 31 No. of Claims : 32

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009318 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ROOFING UNDERLAYMENT USING A PRESSURE SENSITIVE ADHESIVE AND METHODS FOR MAKING AND USING THE SAME

(51) International classification	:E04D0012000000, E04D0005140000, E04D0005120000, B32B0037120000, B32B0007060000
(31) Priority Document No	:62/891710
(32) Priority Date	:26/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047809 :25/08/2020
(87) International Publication No	:WO 2021/041418
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)BOSTIK, INC.
Address of Applicant :11320 W. Watertown Plank Road. Wauwatosa, Wisconsin 53226-3413 U.S.A.
(72)**Name of Inventor :**
1)KEULER, David P.
2)BAUSCH, Cory C.
3)ALPER, Mark D.

(57) Abstract :
A roofing underlayment capable of adhering to a roof deck comprising: (a) a roofing membrane having a first and a second major surface; and (b) a pressure-sensitive adhesive disposed on the first major surface of the roofing membrane and comprising: (i) at least one of butyl rubber or polyisobutylene; (ii) a first liquid plasticizer, preferably polybutene; and (iii) a tackifier, wherein the Tg of the adhesive is at most about 100 C. The adhesive provides high bond strength and excellent long-term heat aging, weathering resistance, as well as good low temperature properties while providing a moisture proof seam. A method for making the roofing underlayment includes applying the adhesive to the membrane then applying a release liner over the adhesive layer. A method for using the roofing underlayment comprises removing the release liner then adhering the underlayment to the roof deck by contacting the first to the roof deck.

No. of Pages : 28 No. of Claims : 29

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009319 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : BARRIER FILM AND BARRIER PACKAGING MATERIAL

(51) International classification	:B32B0027000000, F01D0005280000, G02B0005230000, C08J0007060000, C23C0014000000
(31) Priority Document No	:62/884759
(32) Priority Date	:09/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/JP2020/026048 :02/07/2020
(87) International Publication No	:WO 2021/029156
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TOPPAN INC.
Address of Applicant :5-1, Taito 1-chome, Taito-ku, Tokyo 1100016 Japan
(72)**Name of Inventor :**
1)IMAIZUMI Shukiko
2)MURASE Tomokazu

(57) Abstract :
A barrier film according to the present disclosure is provided with: a substrate film comprising a polyolefin resin; an inorganic oxide layer provided on one surface of the substrate film; and a deformation-resistant barrier coat layer provided in contact on the inorganic oxide layer, wherein the deformation-resistant barrier coat layer comprises a hydroxyl group-containing polymer compound and water-swellable mica, and when the total mass of the deformation-resistant barrier coat layer is 100 parts by mass, the content of the water-swellable mica in the deformation-resistant barrier coat layer is 5-35 parts by mass.

No. of Pages : 52 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022
(21) Application No.202217009320 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AIR-STABLE NI(0)-OLEFIN COMPLEXES AND THEIR USE AS CATALYSTS OR PRECATALYSTS

(51) International classification	:H01L0051000000, A01K0001000000, C07F0015000000, C07D0207060000, B82Y0040000000
(31) Priority Document No	:19189236.3
(32) Priority Date	:30/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/069898 :14/07/2020
(87) International Publication No	:WO 2021/018572
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)STUDIENGESELLSCHAFT KOHLE MBH
Address of Applicant :Kaiser-Wilhelm-Platz 1 45470 Mülheim Germany
(72)**Name of Inventor :**
1)CORNELLA, Josep
2)NATTMANN, Lukas

(57) Abstract :
The present invention relates to air stable, binary Ni(0)-olefin complexes and their use in organic synthesis.

No. of Pages : 26 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009321 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COMPOSITION FOR FORMING TIN OXIDE

(51) International classification	:C07F0007220000, A61K0008020000, B01J0031060000, C25D0003220000, B01J0023620000
(31) Priority Document No	:10-2019-0119109
(32) Priority Date	:26/09/2019
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:PCT/KR2020/012366 :14/09/2020
(87) International Publication No	:WO 2021/060753
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LG CHEM, LTD.
Address of Applicant :128, Yeoui-daero Yeongdeungpo-gu Seoul 07336 Republic of Korea
(72)**Name of Inventor :**
1)CHOI, Jung Ho
2)HWANG, In Sung
3)PARK, Hun Min
4)LEE, Dong Chul
5)HWANG, Gyo Hyun
6)KIM, Kwang Hyun
7)BANG, Jung Up

(57) Abstract :
The present invention relates to a composition for forming tin oxide and a method for forming tin oxide using same, wherein the composition of the present invention is easy to prepare and can form a high yield of tin oxide.

No. of Pages : 22 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009323 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CYANIDE ON DEMAND

(51) International classification	:C01C0003020000, C01B0003380000, B01J0008020000, B01J0019240000, B01J0008060000
(31) Priority Document No	:PA 2019 01150
(32) Priority Date	:01/10/2019
(33) Name of priority country	:Denmark
(86) International Application No Filing Date	:PCT/EP2020/076713 :24/09/2020
(87) International Publication No	:WO 2021/063799
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HALDOR TOPSØE A/S
Address of Applicant :Haldor Topsøes Allé 1 2800 Kgs. Lyngby Denmark
(72)**Name of Inventor :**
1)MORTENSEN, Peter Mølgaard
2)LARSEN, Kasper Emil
3)AASBERG-PETERSEN, Kim
4)KLEIN, Robert

(57) Abstract :
A reactor system and a process for carrying out the reaction of a feed gas comprising an alkane such as methane, and ammonia to hydrogen cyanide and/or a nitrile are provided, where the heat for the endothermic reaction is provided by resistance heating. In particular, the reaction is the BMA (Blausäure aus Methan und Ammoniak) reaction.

No. of Pages : 43 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009324 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PREPARATION OF POLYURETHANE SYSTEMS

(51) International classification	:B29B0007000000, C08K0005430000, B29B0007900000, C08K0005250000, B29B0007720000
(31) Priority Document No	:62/877904
(32) Priority Date	:24/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/EP2020/069739 :13/07/2020
(87) International Publication No	:WO 2021/013607
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)EVONIK OPERATIONS GMBH
Address of Applicant :Rellinghauser Strasse 1-11 45128 Essen Germany
(72)**Name of Inventor :**
1)EMMRICH-SMOLCZYK, Eva
2)VIDAKOVIC, Mladen
3)WENDEL, Stephan
4)BURDENIUC, Juan Jesus

(57) Abstract :
The invention relates to a process for preparing polyurethanes using a component A containing a polyhydrazide, a polysemicarbazide, a polysulfonyl hydrazide and/or polysulfonyl carbodihydrazide, in particular a polyhydrazide, and the component A being used in the form of a mixture C that comprises a component B comprising a dispersant.

No. of Pages : 16 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009341 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RESOURCE SELECTION METHOD AND APPARATUS, ELECTRONIC DEVICE, AND STORAGE MEDIUM

(51) International classification	:H04B0017318000, H04W0072040000, H04W0072020000, H04W0072080000, H04L0025020000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/CN2020/080682 :23/03/2020
(87) International Publication No	:WO 2021/189193
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.
Address of Applicant :No.18, Haibin Road, Wusha, Chang'an Dongguan, Guangdong 523860 China
(72)**Name of Inventor :**
1)DING, Yi
2)ZHAO, Zhenshan

(57) Abstract :
The present application relates to a resource selection method and apparatus, an electronic device, and a storage medium. The method comprises: if the maximum number of DMRS ports corresponding to a PSSCH is at least two, UE compares an RSRP of a channel with a preset received power threshold, and determines, according to the comparation result, whether to exclude a resource in a resource selection window of the UE, so that an implementation mode of comparing RSRP values measured by two or more DMRS ports with an SL-RSRP when the PSSCH relates to dual-layer transmission is determined; when the PSSCH relates to the dual-layer transmission, it is also possible to compare the RSRP values measured by the DMRS ports with the SL-RSRP to perform resource selection, so that the resource selection mode can be applied in various scenarios.

No. of Pages : 47 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009342 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INSULATING GLAZING WITH LOW-POWER HEATING AND HIGH MECHANICAL STRENGTH

(51) International classification	:B32B0017100000, B64C0001140000, E06B0003663000, B64D0045000000, B60J0001020000
(31) Priority Document No	:FR1909538
(32) Priority Date	:30/08/2019
(33) Name of priority country	:France
(86) International Application No Filing Date	:PCT/EP2020/071864 :04/08/2020
(87) International Publication No	:WO 2021/037496
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SAINT-GOBAIN GLASS FRANCE
Address of Applicant :Tour Saint-Gobain 12 Place de l'Iris 92400 COURBEVOIE France
(72)**Name of Inventor :**
1)TONDU, Thomas

(57) Abstract :
The present invention concerns an insulating glazing formed of a first laminated glazing (1) formed of two glass sheets (11, 13) of thickness at most equal to 2 mm each, bonded to one another by means of an intermediate adhesive layer (12), a second structural laminated glazing (2) ensuring the mechanical strength required under the flight conditions of an aircraft, in particular the resistance to bird strike and good control of the deformation of the glazing under the pressure difference conditions of a flight on either side of the insulating glazing, and a gas layer (4) between the first (1) and the second (2) laminated glazing, the first laminated glazing (1) being provided with a heating system (14); the application of this insulating glazing as glazing for an aerial vehicle, in particular as aircraft cockpit lateral glazing.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009347 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : ENHANCED SECURE ENCRYPTION AND DECRYPTION SYSTEM

(51) International classification	:H04L0029060000, H04L0009080000, H04L0009320000, G06T0007110000, H04L0009300000
(31) Priority Document No	:62/878637
(32) Priority Date	:25/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043283 :23/07/2020
(87) International Publication No	:WO 2021/016459
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)EVERYTHING BLOCKCHAIN TECHNOLOGY CORP.
Address of Applicant :12574 Flagler Center Blvd., Ste. 101 Jacksonville FL 32258 U.S.A.
(72)**Name of Inventor :**
1)HART, Brandon
2)ROACH, Courtney

(57) Abstract :
In one form, a method for a data creator to securely send a data payload to another device in a transient symmetric key technology (TSKT) system includes receiving a first seed and a formula from a command and control server. A second seed is generated, and the first seed and the second seed are combined using the formula to create a data seed. A first key is generated using the first seed, and the second seed is encrypted using the first key to form an encrypted second seed. A second key is generated using the data seed, and the data payload is encrypted using the second key to form an encrypted data payload. The encrypted data payload and the encrypted second seed are combined in a secure container, and subsequently all keys and seeds and the formula are destroyed.

No. of Pages : 13 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009350 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TRELLIS PANELS FOR SUNLIGHT DELIVERY, SHOOT POSITIONING, AND CANOPY DIVISION

(51) International classification	:A01G0013020000, A01G0007040000, C07K0014415000, C12N0015820000, A01G0009140000
(31) Priority Document No	:62/880542
(32) Priority Date	:30/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044046 :29/07/2020
(87) International Publication No	:WO 2021/021916
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)OPTI-HARVEST, INC.
Address of Applicant :1801 Century Park East Suite 520 Los Angeles, California 90067 U.S.A.
(72)**Name of Inventor :**
1)BOOTH, Nicholas
2)RAVID, Yosepha Shahak
3)PEACOCK, William L.
4)RAVID, Nadav
5)FARKAS, Daniel L.
6)DESTLER, Jonathan

(57) Abstract :
Provided herein are devices, systems, and methods for sunlight delivery, shoot positioning, canopy division, positioning fruit into distinct zones, managing fruit maturity and quality, rain, wind, and hail protection, and reducing canopy management and harvest labor of one or more plants on a trellis comprising one or more panels and a standoff, wherein the panels divide the growth of plant shoots on the trellis, thereby modifying growth or development of the plants. In some embodiments, the panels collect light energy and direct the collected light energy to the plants, thereby modifying growth or development of the plants and their producing of fruit.

No. of Pages : 47 No. of Claims : 94

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009352 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : RADIATION CURABLE INTAGLIO INKS

(51) International classification	:C09D0011101000, B42D0025290000, B41M0003140000, C09D0011107000, B41M0001100000
(31) Priority Document No	:19189054.0
(32) Priority Date	:30/07/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/070951 :24/07/2020
(87) International Publication No	:WO 2021/018771
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SICPA HOLDING SA
Address of Applicant :Avenue de Florissant 41 1008 Prilly Switzerland
(72)**Name of Inventor :**
1)SPITTELER, Jean-Daniel
2)MAGNIN, Patrick
3)BONNEFOI, Caroline
4)ANNUNZIATA, Liana
5)GOLLUT, Sébastien

(57) Abstract :
The present invention relates to the field of security documents and their protection against counterfeit and illegal reproduction and relates to the field of intaglio printing processes for the printing of said security documents. In particular, the present invention relates to radiation curable intaglio inks suitable for intaglio printing a pattern or image, wherein said intaglio printing comprises wiping off ink excess with a polymeric wiping cylinder and cleaning said cylinder with an alkaline aqueous wiping solution. The disclosed radiation curable intaglio inks comprise one or more radiation curable compounds, wherein at least one of said one or more radiation curable compounds is a fatty acid polyester (meth)acrylate oligomer; one or more photoinitiators; and a high molecular weight acid modified alkyd surfactant and/or an alkylarene sulfonic acid surfactant; one or more fillers or extenders.

No. of Pages : 34 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009355 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GRADED HYDROGEN-FREE CARBON-BASED HARD MATERIAL LAYER COATED ONTO A SUBSTRATE

(51) International classification	:C23C0014060000, C23C0014320000, H01J0037320000, G11B0005840000, C23C0016270000
(31) Priority Document No	:62/880913
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/EP2020/071693 :31/07/2020
(87) International Publication No	:WO 2021/019084
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)OERLIKON SURFACE SOLUTIONS AG, PFÄFFIKON
Address of Applicant :Churerstrasse 120 8808 Pfäffikon SZ Switzerland
(72)**Name of Inventor :**
1)BECKER, Jürgen
2)BEGANOVIC, Neir
3)KARNER, Johann
4)STELZIG, Timea
5)VETTER, Jörg

(57) Abstract :
A method to produce a hard coating onto a substrate, wherein the hard coating comprises a hydrogen-free amorphous carbon coating, wherein the amorphous carbon coating is deposited onto the substrate using a cathodic arc discharge deposition technique, wherein a bias voltage is applied to the substrate with an absolute value that is greater than 0 V, preferably greater than 10 V and less than 1000 V, and wherein the absolute value of the bias voltage is increased during the coating process to obtain a first structure and a second structure and a gradient between the first and the second structure along the coating thickness, wherein the first and the second structure comprise sp2 and sp3 carbon bonds but differ in their relative concentration, wherein at least one coating pause is applied during the coating process in order to reduce the substrate temperature during the coating pause.

No. of Pages : 12 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009356 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEVICES, SYSTEMS, AND METHODS FOR CONTINUOUS PROCESSING WITH ALTERNATING TANGENTIAL FLOW

(51) International classification	:B01D0061140000, B01D0061180000, C12M0001260000, C12M0001000000, B01D0069020000
(31) Priority Document No	:62/882783
(32) Priority Date	:05/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/043838 :28/07/2020
(87) International Publication No	:WO 2021/025901
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)REPLIGEN CORPORATION
Address of Applicant :41 Seyon Street Waltham, Massachusetts 02453 U.S.A.
(72)**Name of Inventor :**
1)PERREAULT, Mark A.

(57) Abstract :
The present disclosure relates to tangential flow filters, membranes, and ultrafiltration membranes, for various applications, including bioprocessing and pharmaceutical applications, systems employing such filters, and methods of filtration using the same. In an aspect, an alternating tangential flow system for continuous processing may include a feed line containing a fluid. A retentate line may be in fluid communication with the feed line. A first diaphragm may be at an inlet of the retentate line configured to pump fluid toward an outlet of the retentate line. A second diaphragm may be at the outlet of the retentate line configured to pump fluid toward the inlet of the retentate line. A membrane may be in fluid communication with the retentate line between the first diaphragm and the second diaphragm. A retentate pump may be at the retentate outlet configured to pump the fluid out of the retentate line.

No. of Pages : 18 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009357 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEMS AND METHODS FOR DETECTING SPECULAR SURFACES

(51) International classification	:A61B0001000000, H04N0005225000, G07D0007200000, G06K0009200000, H04N0013289000
(31) Priority Document No	:62/883995
(32) Priority Date	:07/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044789 :03/08/2020
(87) International Publication No	:WO 2021/026092
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UNIVERSAL CITY STUDIOS LLC
Address of Applicant :100 Universal City Plaza Universal City, California 91608 U.S.A.
(72)**Name of Inventor :**
1)SMITH, John David

(57) Abstract :
A system for detecting specular surfaces, the system including an image sensor that captures image data from an area, a first light emitter that emits a first light into the area from a first position, a second light emitter that emits a second light into the area from a second position, and control circuitry. The control circuitry operates to acquire first image data from the image sensor while the first light emitter is active and the second light emitter is inactive, acquire second image data from the image sensor while the second light emitter is active and the first light emitter is inactive, and process the first image data with the second image data to identify non-overlapping image data between the first image data and the second image data as a specular surface.

No. of Pages : 13 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009358 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHODS FOR PURIFYING ANTIBODIES

(51) International classification	:B01D0015380000, C07K0001220000, C07K0016000000, C07K0014435000, B01D0015360000
(31) Priority Document No	:19189841.0
(32) Priority Date	:02/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/071533 :30/07/2020
(87) International Publication No	:WO 2021/023619
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UCB BIOPHARMA SRL
Address of Applicant :60, Allée de la Recherche 1070 Brussels Belgium
(72)**Name of Inventor :**
1)WATSON, Neil Alan
2)PHIPPEN, Curtis William

(57) Abstract :
The invention relates to the field of manufacturing recombinant antibody molecules. In particular, methods of purifying such recombinant antibody molecules are provided wherein imidazole or an imidazole-analogue is added during the elution of the recombinant antibody molecule from an affinity chromatography resin, such as a protein-A-based resin.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009359 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : INTERACTIVE HEADGEAR

(51) International classification	:A42B0003040000, B23K0009095000, G01C0021360000, G09B0005060000, H04N0007180000
(31) Priority Document No	:62/883458
(32) Priority Date	:06/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044785 :03/08/2020
(87) International Publication No	:WO 2021/026090
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)UNIVERSAL CITY STUDIOS LLC
Address of Applicant :100 Universal City Plaza Universal City, California 91608 U.S.A.
(72)**Name of Inventor :**
1)KILLIAN, Alyssa Dalys
2)BRUNO, Dante Lamar
3)ROBINSON, Megan Elizabeth

(57) Abstract :
Headgear includes one or more sensors that provide input information to a controller of the headgear. The sensors may include accelerometers, location sensors, wireless receivers, cameras, and so on. The controller may receive the input information that is indicative of an orientation of the headgear, a location of the headgear, a communication signal, and/or an image or video. The headgear may also include one or more output devices that may be controlled by the controller (e.g., actuators, electronic displays, lights, speakers, and/or communication interfaces). As such, the headgear may output instructions to actuate an actuator, display an image on an electronic display, activate a light, emit a sound using a speaker, and/or send a communication signal using a communication interface. In particular, the headgear may determine an instruction to send to an output device in response to receiving the input information, and send the instruction to the output device.

No. of Pages : 21 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009371 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SUBRATING AND MULTIPLEXING NON-STANDARD RATES IN ZR AND ZR+ OPTICAL INTERFACES

(51) International classification	:H04J0003160000, H04L0029080000, H04L0012801000, H04L0012931000, H04L0029060000
(31) Priority Document No	:16/524389
(32) Priority Date	:29/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/042714 :20/07/2020
(87) International Publication No	:WO 2021/021474
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CIENA CORPORATION
Address of Applicant :7035 Ridge Road Hanover, Maryland 21076 U.S.A.
(72)**Name of Inventor :**
1)GAREAU, Sebastien

(57) Abstract :
A ZR or ZR+ interface includes circuitry configured to receive one or more client signals; and circuitry configured to transmit the one or more client signals as an aggregate signal in a Flexible Ethernet (FlexE) format in one of a ZR format and a ZR+ format, including a mapping indicative of how the one or more client signals are one of multiplexed and subrated into the aggregate signal. The aggregate signal can have a rate that does not correspond to a standard Ethernet Physical Medium Dependent (PMD). The FlexE format can include a plurality of FlexE instances with at least one of the FlexE instances having calendar slots removed for a subrating application.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022
(21) Application No.202217009378 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYNERGISTIC WOOD PRESERVATIVE COMPOSITION COMPRISING POLYMERIC BETAINE AND CARBAMATE

(51) International classification	:A01N0047120000, B27K0003360000, B27K0003160000, B27K0003000000, A61K0031325000
(31) Priority Document No	:62/884738
(32) Priority Date	:09/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/045452 :07/08/2020
(87) International Publication No	:WO 2021/030202
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TROY CORPORATION
Address of Applicant :8 Vreeland Road Florham Park, NJ 07932 U.S.A.
(72)**Name of Inventor :**
1)CHEN, Min
2)JACOBS, Jake, Zachary

(57) Abstract :
A synergistic wood preservation composition comprising a polymeric betaine and 3-iodo-2-propynyl butyl carbamate (IPBC). Also, a method of controlling microorganisms that produce mold and/or sapstain on wood or wood products by applying to a wood or wood product the synergistic wood preservation composition to control the microorganisms.

No. of Pages : 10 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009379 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : IMMUNOSTIMULATORY MULTIMERIC BINDING MOLECULES

(51) International classification	:C07K0016280000, A61K0039395000, A61P0035000000, A61K0039000000, C07K0016460000
(31) Priority Document No	:62/887458
(32) Priority Date	:15/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/046379 :14/08/2020
(87) International Publication No	:WO 2021/030688
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)IGM BIOSCIENCES, INC.
Address of Applicant :325 East Middlefield Road Mountain View, California 94043 U.S.A.
(72)**Name of Inventor :**
1)BALIGA, Ramesh
2)GIFFON, Thierry
3)NG, Dean

(57) Abstract :
This disclosure provides multivalent binding molecule comprising a modified J-chain that comprises an immune stimulatory agent. Also provided are polynucleotides encoding the binding molecule or subunits thereof and vectors and host cell comprising said polynucleotides. This disclosure further provides methods for producing and/or using a multivalent binding molecule comprising a modified J-chain that comprises an immune stimulatory agent.

No. of Pages : 94 No. of Claims : 85

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009380 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CONJUGATE AND USES THEREOF

(51) International classification	:A61K0047640000, A61K0047540000, A61K0047690000, A61K0047680000, C07K0014470000
(31) Priority Document No	:1911403.2
(32) Priority Date	:09/08/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051891 :07/08/2020
(87) International Publication No	:WO 2021/028666
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)OXFORD UNIVERSITY INNOVATION LIMITED
Address of Applicant :Buxton Court 3 West Way Oxford OX2 0JB U.K.
2)UNITED KINGDOM RESEARCH AND INNOVATION
3)ASSOCIATION INSTITUT DE MYOLOGIE
4)INSERM (INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE)
5)SORBONNE UNIVERSITE
(72)**Name of Inventor :**
1)WOOD, Matthew
2)VARELA, Miguel
3)HOLLAND, Ashling
4)RAZ, Richard
5)FURLING, Denis
6)KLEIN, Arnaud
7)GAIT, Michael

(57) Abstract :
The present invention relates to conjugates formed from a cell-penetrating peptide carrier linked to a therapeutic molecule, wherein the peptide carrier is defined by specific domains and the therapeutic molecule is a nucleic acid formed of trinucleotide repeats. The present invention further relates to the use of such a conjugate in methods of treatment or as a medicament, especially in the treatment of trinucleotide repeat disorders such as myotonic dystrophy (DM1).

No. of Pages : 51 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009383 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SCREENING DEVICE

(51) International classification	:A61G0007050000, E04F0015020000, B62K0011000000, G01R0033070000, G09F0009300000
(31) Priority Document No	:19193866.1
(32) Priority Date	:27/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/074027 :27/08/2020
(87) International Publication No	:WO 2021/038011
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)METSO OUTOTEC FINLAND OY
Address of Applicant :PL 306 33101 TAMPERE Finland
(72)**Name of Inventor :**
1)LEINONEN, Timo

(57) Abstract :
Modular screen support deck (1) comprising first (2) and second (3) deck sides extending in parallel with each other defining a deck plane between the two deck sides. Further, a first extension structure (8) connected to the first deck side is provided, the first extension structure extending inwardly from the first deck side and comprising a first connection structure, the first connection structure being arranged a distance from the first deck side and a second extension structure (9) connected to the second deck side is provided, the second extension structure extending inwardly from the second deck side and comprising a second connection structure, the second connection structure being arranged a distance from the second deck side. The support deck further comprises a first cross-member (4) with a first end connected to the first connection structure and a second connected to the second connection structure.

No. of Pages : 14 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009393 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MAXIMUM NUMBER OF NON-OVERLAPPING CCE AND BLIND DECODE PER-MONITORING SPAN

(51) International classification	:H04W0072040000, H04L0005000000, H04L0027260000, H04L0025020000, H04L0001000000
(31) Priority Document No	:62/884568
(32) Priority Date	:08/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/IB2020/057370 :04/08/2020
(87) International Publication No	:WO 2021/024184
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)
Address of Applicant :SE-164 83 Stockholm Sweden
(72)**Name of Inventor :**
1)KITTICHOKECHAI, Kittipong
2)ANDERSSON, Mattias
3)BLANKENSHIP, Yufei

(57) Abstract :
Embodiments of a method performed by a wireless device are disclosed. In one embodiment, the method comprises providing physical downlink control channel capability information to a base station, where the physical downlink control channel capability information comprises one or more candidate values comprising one or more candidate (X,Y) values or one or more candidate (X,Y,μ) values, where X is a minimum time separation in Orthogonal Frequency Division Multiplexing (OFDM) symbols between the starts of two physical downlink control channel monitoring spans, Y is a maximum length of a physical downlink control channel monitoring span in terms of OFDM symbols, and μ is subcarrier spacing. The method further comprises determining a maximum value. The maximum value is either a maximum number of non-overlapping Control Channel Elements (CCEs) for channel estimation or a maximum number of blind decodes for physical downlink control channel monitoring, per physical downlink control channel monitoring span.

No. of Pages : 43 No. of Claims : 26

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009395 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AN ELECTROPORATION APPARATUS AND METHOD

(51) International classification	:A61N0001320000, G01N0033680000, C12N0013000000, A61K0009000000, C12N0015870000
(31) Priority Document No	:19194958.5
(32) Priority Date	:02/09/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/074374 :01/09/2020
(87) International Publication No	:WO 2021/043779
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MIRAI MEDICAL LIMITED
Address of Applicant :Unit 5 Howley Court, Oranmore, County Galway, H91 FK6C Ireland
(72)**Name of Inventor :**
1)SODEN, Declan
2)FORDE, Colin
3)KINSELLA, Sean
4)MOORE, Tony

(57) Abstract :
An electroporation apparatus has an electroporation probe (26) terminals (27) for linking with electrodes. A foam is injected at the treatment site to displace blood rather than mixing with it, increasing the contact time of a higher concentration of active agent with the tissue and thus resulting in greater efficacy. With foam solutions, a lower concentration of agent can be used to obtain the same therapeutic effect as in their liquid counterpart, reducing the prevalence of side effects associated with higher concentrations. A foam solution compared to an equivalent liquid solution enables more efficient cell electroporation particularly where bipolar pulses have been employed by mitigating an increase in tissue conductivity as would normally be observed with a comparable liquid solution. A more efficient cell permeabilisation would result in better results where electroporation is being delivered alone or as a tool to aid in the uptake of molecules into the cell.

No. of Pages : 36 No. of Claims : 105

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009396 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CHIP COLLECTING BOX FOR MACHINE TOOL

(51) International classification	:B23Q0011000000, B23Q0011100000, B24B0055120000, B04C0009000000, B02C0018220000
(31) Priority Document No	:10-2019-0094724
(32) Priority Date	:05/08/2019
(33) Name of priority country	:Republic of Korea
(86) International Application No Filing Date	:PCT/KR2020/009189 :13/07/2020
(87) International Publication No	:WO 2021/025311
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PARK, Gyu
Address of Applicant :(Hakjang-dong, Hakjang Muhak Apt) 501Dong 1102Ho,84, Daedong-ro, Sasang-gu, Busan 47051 Republic of Korea
(72)**Name of Inventor :**
1)PARK, Gyu
2)PARK, Gyu
3)PARK, Jin A

(57) Abstract :
The present invention relates to a chip collecting box for a machine tool and, more specifically, to a chip collecting box, in which bottom plates that open and close by means of hinges are installed on both sides at the bottom of a chip collecting box body having open upper and lower portions. When an opening cord is pulled while the chip collecting box body is in an upwardly raised state, the bottom plates on both sides become unlocked and open toward the bottom such that machine tool chips stored in the chip collecting box are discharged downward. When a closing cord is pulled after the chips are discharged, the bottom plates on both sides are closed by the closing cord and become hooked on a hooking means.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009407 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : GENETIC LOCI ASSOCIATED WITH DISEASE RESISTANCE IN SOYBEANS

(51) International classification	:C12Q0001689500, A01H0001040000, A01H0005100000, C12N0015820000, A01H0001020000
(31) Priority Document No	:62/881008
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/044228 :30/07/2020
(87) International Publication No	:WO 2021/022026
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SYNGENTA CROP PROTECTION AG
Address of Applicant :Rosentalstrasse 67 4058 Basel Switzerland
(72)**Name of Inventor :**
1)LIU, Qingli
2)DIETRICH, Robert Arthur
3)CURLEY, Thomas Joseph
4)HIPSKIND, John Daniel
5)BREITINGER, Becky Welsh
6)DAWSON, John Luther

(57) Abstract :
The present invention relates to methods and compositions for identifying, selecting and/or producing a disease resistant soybean plant or germplasm using markers, genes and chromosomal intervals derived from Glycine canescens PI440935, PI483193, PI595799, or a progeny thereof, or Glycine tomentella, or a progeny thereof. A soybean plant or germplasm that has been identified, selected and/or produced by any of the methods of the present invention is also provided. Disease resistant soybean seeds, plants and germplasms are also provided.

No. of Pages : 342 No. of Claims : 37

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009408 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MEDICAL IMAGE PROCESSING APPARATUS, X-RAY DIAGNOSIS APPARATUS, AND MEDICAL IMAGE PROCESSING METHOD

(51) International classification	:A61B0006000000, A61B0006030000, G06T0007200000, G06T0011000000, G06T0007000000
(31) Priority Document No	:2019-152360
(32) Priority Date	:22/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/031427 :20/08/2020
(87) International Publication No	:WO 2021/033741
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)CANON MEDICAL SYSTEMS CORPORATION
Address of Applicant :1385 Shimoishigami, Otawara-shi, Tochigi 3240036 Japan
(72)**Name of Inventor :**
1)ABE, Shingo

(57) Abstract :
This medical image processing apparatus according to an embodiment comprises an acquisition unit, an extraction unit, and an emphasis-processed image generation unit. The acquisition unit acquires a plurality of time-series X-ray images related to a subject. The extraction unit extracts components related to movement in each of the plurality of X-ray images. The emphasis-processed image generation unit generates an emphasis-processed image in which a moving object is emphasized in each of the plurality of X-ray images on the basis of the extracted components related to the movement.

No. of Pages : 41 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022
(21) Application No.202217009409 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : MEDICAL IMAGE PROCESSING DEVICE, MEDICAL IMAGE PROCESSING PROGRAM, MEDICAL DEVICE, AND TREATMENT SYSTEM

(51) International classification	:A61N0005100000, A61B0006030000, A61B0006000000, G06T0007110000, G06T0007593000
(31) Priority Document No	:2019-186737
(32) Priority Date	:10/10/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/037994 :07/10/2020
(87) International Publication No	:WO 2021/070861
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION
Address of Applicant :72-34, Horikawa-cho, Saiwai-ku, Kawasaki-shi, Kanagawa 2120013 Japan
(72)**Name of Inventor :**
1)SAKATA Yukinobu
2)HIRAI Ryusuke
3)TANIZAWA Akiyuki
4)SUGIURA Kyoka
5)MORI Shinichiro
6)OKAYA Keiko

(57) Abstract :
A medical image processing device according to an embodiment of the present invention has a comparison unit and a positioning area determination unit. The comparison unit compares a first image of a patient with a comparison image which was used in past radiation therapy and has a designated effective area that was used for alignment in the radiation therapy. The positioning area determination unit determines a positioning area included in the first image and similar to the effective area on the basis of the comparison result from the comparison unit.

No. of Pages : 74 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009410 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : DEPOSIT MANAGEMENT DEVICE, DEPOSIT MANAGEMENT METHOD, AND DEPOSIT MANAGEMENT SYSTEM

(51) International classification	:G07G0001000000, G07G0005000000, G06Q0020200000, G06Q0030060000, G07G0001120000
(31) Priority Document No	:2019-152677
(32) Priority Date	:23/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/026257 :03/07/2020
(87) International Publication No	:WO 2021/039125
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)HITACHI CHANNEL SOLUTIONS, CORP.
Address of Applicant :6-3, Osaki 1-chome, Shinagawa-ku, Tokyo 1418576 Japan
(72)**Name of Inventor :**
1)TSUCHIYA, Masaki
2)TAKADACHI, Masato
3)SUZUKI, Tadamichi
4)MIZUNO, Eiji
5)SAKAMAKI, Takako
6)OKABE, Kosei

(57) Abstract :
The present invention pertains to a sales deposit management method for managing a sales amount for each shift of a cashier handling a POS register by allowing the cashier to process, with a sales and deposit management device, a shift end receipt issued when the shift ends and a valuable medium in the POS register, wherein a drawer ID, which identifies the sales amount of the cashier, is created, the shift end receipt is output together with the sales amount, and the sales deposit management device reads the drawer ID from the shift end receipt and outputs a sales deposit result receipt on the basis of the sales amount that is required to be deposited and a deposit amount of the valuable medium that is actually received.

No. of Pages : 25 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009411 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CYCLIC DIONES AS HERBICIDAL COMPOUNDS

(51) International classification	:C07D0403040000, A01N0043900000, C07D0405120000, C07D0471040000, A01N0043653000
(31) Priority Document No	:1910926.3
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/EP2020/071131 :27/07/2020
(87) International Publication No	:WO 2021/018834
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SYNGENTA CROP PROTECTION AG
Address of Applicant :Rosentalstrasse 67 4058 Basel Switzerland
(72)**Name of Inventor :**
1)HENNESSY, Alan, Joseph
2)JONES, Elizabeth, Pearl
3)DALE, Suzanna, Jane
4)GREGORY, Alexander, William
5)HOULSBY, Ian, Thomas, Tinmouth
6)BHONOAH, Yunas
7)COMAS-BARCELO, Julia
8)ELVES, Philip, Michael

(57) Abstract :
The present invention relates to compounds of Formula (I), wherein R1, R2, R3, R4x, R4y, m, n and G are as defined herein. The invention further relates to herbicidal compositions which comprise a compound of Formula (I), to their use for controlling weeds, in particular in crops of useful plants.

No. of Pages : 49 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009414 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : WHEY-BASED NUTRITIONAL COMPOSITIONS FORTIFIED WITH CALCIUM

(51) International classification	:A23L0033000000, A23L0033190000, A23L0033160000, A23L0033120000, A23L0033115000
(31) Priority Document No	:19197631.5
(32) Priority Date	:16/09/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/EP2020/075695 :15/09/2020
(87) International Publication No	:WO 2021/052925
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SOCIETE DES PRODUITS NESTLE S.A.
Address of Applicant :Avenue Nestlé 55 1800 Vevey Switzerland
(72)**Name of Inventor :**
1)BARONE, Giovanni
2)KELLY, Alan, L
3)O'MAHONY, James, A
4)O'REGAN, Jonathan

(57) Abstract :
The invention concerns whey-based nutritional compositions fortified with calcium that are suitable for infant nutrition, including infant formula (IF) and growing up milk (GUM). The nutritional compositions are based on a-lactalbumin enriched whey protein concentrate that has been fortified with calcium.

No. of Pages : 27 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009415 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FILTERING MATERIAL AND FILTER FOR RETAINING POLYAROMATIC HYDROCARBONS, CARBONYLS AND OTHER COMPOUNDS FROM SMOKE FROM TOBACCO PRODUCTS

(51) International classification	:B01D0039200000, B01D0053020000, A24D0003040000, A24D0003100000, B01J0020260000
(31) Priority Document No	:38364
(32) Priority Date	:10/09/2019
(33) Name of priority country	:Uruguay
(86) International Application No Filing Date	:PCT/IB2020/051801 :03/03/2020
(87) International Publication No	:WO 2021/048637
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)COMPAÑIA INDUSTRIAL DE TABACOS MONTE PAZ S.A.
Address of Applicant :San Ramón 716 Montevideo Uruguay
2)UNIVERSIDAD DE LA REPÚBLICA
(72)**Name of Inventor :**
1)BENSE CANDELA, Tomás
2)BANCHERO ISASMENDI, Magela María
3)UMPIÉRREZ VÁZQUEZ, Eleuterio Francisco
4)RUFENER, Cristina
5)VILLANUEVA, Juan Pablo
6)PARDO, Helena
7)FACCIO, Ricardo
8)MOMBRÚ, Alvaro

(57) Abstract :
The invention relates to a hybrid graphene material and a filter able to totally or partially retain polyaromatic hydrocarbons, carbonyl and other compounds from smoke from tobacco products or industrial processes, which has activated carbon and graphene materials as adsorbent substances, both supported by the same matrix and in the same compartment of the filter, which is optionally connected to another compartment of a conventional filter comprising fibres of cellulose acetate or a similar polymer. The invention also relates to a method for producing the material.

No. of Pages : 15 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009418 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CONNECTOR, ELECTRONIC DEVICE AND OPEN PLUGGABLE SPECIFICATION (OPS) DEVICE

(51) International classification	:G06F0013400000, H01R0024600000, H04M0001020000, H01R0013660000, H01R0012580000
(31) Priority Document No	:201910940472.8
(32) Priority Date	:30/09/2019
(33) Name of priority country	:China
(86) International Application No Filing Date	:PCT/CN2020/099775 :01/07/2020
(87) International Publication No	:WO 2021/063054
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GUANGZHOU SHIYUAN ELECTRONICS CO., LTD.
Address of Applicant :No.6, 4th Yunpu Road, Huangpu District Guangzhou, Guangdong 510530 China
2)GUANGZHOU SHIRUI ELECTRONICS CO., LTD.
(72)**Name of Inventor :**
1)SU, Zhangyue
2)YANG, Xueya
3)HOU, Minxiang
4)CHEN, Jiangwu

(57) Abstract :
Disclosed are a connector, an electronic device and an open pluggable specification (OPS) device. The connector comprises a plurality of first pins and a plurality of second pins, wherein a pair of first pins, which are adjacent to each other, is used for transmitting a first signal; the plurality of second pins are arranged on two sides of the pair of first pins; the second pins are used for grounding or transmitting a second signal; and the transmission rate of the first signal is greater than the transmission rate of the second signal.

No. of Pages : 45 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009438 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PYRIDINE DERIVATIVES AS TMEM16A MODULATORS FOR USE IN THE TREATMENT OF RESPIRATORY CONDITIONS

(51) International classification	:A61K0031520000, A61K0031437000, C07D0487080000, C07D0211480000, C07D0513040000
(31) Priority Document No	:1910607.9
(32) Priority Date	:24/07/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051778 :24/07/2020
(87) International Publication No	:WO 2021/014166
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)TMEM16A LIMITED
Address of Applicant :6 Falcon Way Shire Park Welwyn Garden City, England AL7 1TW U.K.
(72)**Name of Inventor :**
1)COLLINGWOOD, Stephen
2)BUXTON, Craig
3)HARGRAVE, Jonathan, David
4)INGRAM, Peter
5)SCHOFIELD, Thomas, Beauregard
6)SHAIKH, Abdul
7)STIMSON, Christopher

(57) Abstract :
Compounds of general formula (I), wherein R1, R2, R3, R4, R5, R6, R7, R8, R9 and R10 are as defined herein are useful for treating respiratory disease and other diseases and conditions modulated by TMEM16A.

No. of Pages : 231 No. of Claims : 27

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022
(21) Application No.202217009439 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : REMAINING LIFE ESTIMATION SYSTEM SOLID FUEL CRUSHING DEVICE, REMAINING LIFE ESTIMATION METHOD, AND REMAINING LIFE ESTIMATION PROGRAM

(51) International classification	:G01R0031392000, B02C0015040000, F02D0041040000, G01M0013040000, G01N0003080000
(31) Priority Document No	:2019-179896
(32) Priority Date	:30/09/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/033893 :08/09/2020
(87) International Publication No	:WO 2021/065373
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MITSUBISHI HEAVY INDUSTRIES, LTD.
Address of Applicant :2-3, Marunouchi 3-Chome, Chiyoda-ku, Tokyo 1008332 Japan
2)MITSUBISHI POWER, LTD.
(72)**Name of Inventor :**
1)YAMAGUCHI, Sotaro
2)UEDA, Yuya
3)KOBAYASHI, Hiroyuki

(57) Abstract :
The purpose of the present invention to provide a remaining life estimation system capable of more accurately estimating remaining life, a solid fuel crushing device, a remaining life estimation method, and a remaining life estimation program. This system estimates the remaining life of a journal bearing of a roller (13) that grinds solid fuel between the roller and a rotating table (12), wherein the system comprises: an acquisition unit that acquires a measured value of a hydraulic load as information pertaining to a load applied to the roller (13), and a measured value of a lift amount of the roller (13) as information pertaining to the angle of inclination of the roller (13) relative to the rotating table (12); and an estimation unit that estimates the remaining life of the journal bearing on the basis of the information acquired in the acquisition unit.

No. of Pages : 65 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009472 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : 7,8-DIHYDRO-4H-PYRAZOLO[4,3-C]AZEPINE-6-ONE COMPOUNDS

(51) International classification	:C07K0005080000, C07D0233640000, C07D0319080000, C07C0233560000, C07D0303360000
(31) Priority Document No	:19382680.7
(32) Priority Date	:05/08/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/US2020/044718 :03/08/2020
(87) International Publication No	:WO 2021/026059
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ELI LILLY AND COMPANY
Address of Applicant :Lilly Corporate Center Indianapolis, Indiana 46285 U.S.A.
(72)**Name of Inventor :**
1)LUMERAS AMADOR, Wenceslao
2)BRANDHUBER, Barbara Jean

(57) Abstract :
Disclosed herein are compounds of Formula I: wherein R1 is CH3 or CH2CH3; and pharmaceutically acceptable salts thereof, which are useful for treating cancer.

No. of Pages : 42 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009474 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FILTER MEDIUM COMPRISING A FINE FIBER LAYER

(51) International classification	:B01D0039160000, F23J0015020000, B01D0046000000, H01L0031023200, B82Y0020000000
(31) Priority Document No	:62/912456
(32) Priority Date	:08/10/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/054844 :08/10/2020
(87) International Publication No	:WO 2021/072122
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)DONALDSON COMPANY, INC.
Address of Applicant :1400 West 94th Street P.O. Box 1299 Minneapolis, Minnesota 55440-1299 U.S.A.
(72)**Name of Inventor :**
1)JONES, Derek O.
2)WILLIS, Klenton T.
3)IGNACIO-DE LEON, Patricia A.
4)WEIK, Thomas M.
5)SAVSTROM, Jacob C.

(57) Abstract :
This disclosure describes a filter medium that minimizes the adverse effects of variations in flow rate on filter medium efficiency without a corresponding increase in pressure drop. The filter medium includes a support layer, a continuous fine fiber layer, and an efficiency layer. The continuous fine fiber layer includes a continuous fine fiber that has a diameter of up to 10 micrometers and is located downstream of the efficiency layer.

No. of Pages : 63 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/02/2022

(21) Application No.202217009499 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : AUSTENITIC STEEL ALLOY HAVING AN IMPROVED CORROSION RESISTANCE UNDER HIGH-TEMPERATURE LOADING AND METHOD FOR PRODUCING A TUBULAR BODY THEREFROM

(51) International classification	:F24S0020200000, C22C0038000000, C22C0038440000, C22C0038040000, C22C0038020000
(31) Priority Document No	:10 2019 123 174.4
(32) Priority Date	:29/08/2019
(33) Name of priority country	:Germany
(86) International Application No Filing Date	:PCT/EP2020/073877 :26/08/2020
(87) International Publication No	:WO 2021/037926
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MANNESMANN STAINLESS TUBES GMBH
Address of Applicant :Wiesenstraße 36 45473 Mülheim an der Ruhr Germany
(72)**Name of Inventor :**
1)SPIEGEL, Michael
2)SCHRAVEN, Patrik

(57) Abstract :
The invention relates to an austenitic steel alloy. The aim of the invention is to provide an austenitic steel alloy having an excellent corrosion resistance under high-temperature loading of more than 600 °C and up to 800 °C. In order to achieve this aim, the following chemical composition (in wt.%) is proposed, consisting essentially of: C: 0.01 to 0.10; Si: max. 0.75; Mn: max. 2.00; P: max. 0.03; S: max. 0.03; Cr: 23 to 27; Ni: 17 to 23; Nb: 0.2 to 0.6; N: 0.15 to 0.35; the remainder being Fe and melting-related impurities. The invention also relates to a tubular body made from this steel alloy, to an absorber pipe of a solar receiver of a solar power installation made from this tubular body, to a solar receiver comprising this absorber pipe and to a method for producing a tubular body from this steel alloy.

No. of Pages : 12 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009517 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : NITRIC OXIDE GENERATING SYSTEMS

(51) International classification	:A61K0009000000, A61M0015000000, C04B0028020000, C08G0061120000, G03C0005580000
(31) Priority Document No	:62/891129
(32) Priority Date	:23/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/027739 :10/04/2020
(87) International Publication No	:WO 2021/040813
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)NOTA LABORATORIES, LLC
Address of Applicant :600 S. Wagner Road Suite 6 Ann Arbor, Michigan 48103-9002 U.S.A.
(72)**Name of Inventor :**
1)MARTIN, Glenn
2)FERNANDEZ DECASTRO, Aurora L.
3)MEYERHOFF, Mark E.

(57) Abstract :
An example of a nitric oxide (NO) generating system includes an NO generating formulation, having: a stable NO donor/adduct; a hydrophilic binder; and an additive. The additive is to control a rate of release of NO from the stable NO donor/adduct after the formulation is exposed to an effective amount of water, water vapor, or blue or ultraviolet (UV) light. This example NO generating system further includes an inhalation device in operative contact with the NO generating formulation.

No. of Pages : 44 No. of Claims : 63

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009531 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : METHOD, COMPOSITION AND KIT FOR SIZE SELECTIVE ENRICHMENT OF NUCLEIC ACIDS

(51) International classification	:C12N0015100000, C12Q0001681300, C10L0001000000, C11D0011000000, H01L0023310000
(31) Priority Document No	:62/892041
(32) Priority Date	:27/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/CN2020/111449 :26/08/2020
(87) International Publication No	:WO 2021/037075
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PHASE SCIENTIFIC INTERNATIONAL, LTD.
Address of Applicant :32 & 33/F, Gravity 29 Hing Yip Street Kwun Tong, Kowloon Hong Kong China
(72)**Name of Inventor :**
1)CHIU, Yin To
2)MARSHAK, Daniel, Robert
3)KITTUR, Harsha Madan
4)KOBAYASHI, Masae

(57) Abstract :
Provided is a method for isolating and concentrating nucleic acids of selected target sizes (e.g., in increments less than 1000 base pairs) from a biological fluid mixture comprising combining the biological fluid mixture and a first aqueous two-phase system (ATPS) formed from a first phase forming polymer or surfactant component dissolved in a first phase solution, and a second phase solution, such that target nucleic acid fragments below a desired target size partition to said second phase solution and contaminants partition to the first phase solution, extracting and mixing the second phase solution with a second ATPS formed from a second phase forming polymer or surfactant component dissolved in a third phase solution and a fourth phase solution, such that the target nucleic acid fragments partition to and concentrate in the third phase solution, and recovering the concentrated target nucleic acid fragments from the third phase solution. A composition and kit for isolating and concentrating nucleic acids of selected target sizes as described above are also provided.

No. of Pages : 37 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009533 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : PROTEINS COMPRISING KALLIKREIN RELATED PEPTIDASE 2 ANTIGEN BINDING DOMAINS AND THEIR USES

(51) International classification	:A61K0039000000, C07K0016280000, C07K0014470000, C07K0016460000, C12P0013040000
(31) Priority Document No	:62/878964
(32) Priority Date	:26/07/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/IB2020/056972 :23/07/2020
(87) International Publication No	:WO 2021/019389
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)JANSSEN BIOTECH, INC.
Address of Applicant :800/850 Ridgeview Drive Horsham, Pennsylvania 19044 U.S.A.
(72)**Name of Inventor :**
1)GANESAN, Rajkumar
2)LEE, John
3)LUO, Jinquan
4)MCDEVITT, Theresa
5)SHEN, Fei
6)SONG, Degang
7)BRITTINGHAM, Raymond
8)VENKATARAMANI, Sathyadevi
9)SINGH, Sanjaya
10)ZHAO, Yonghong
11)YI, Fang
12)LA PORTE, Sherry Lynn

(57) Abstract :
Embodiments of the present invention provide isolated proteins comprising antigen binding domains that bind kallikrein related peptidase 2 (hK2), including monospecific and bispecific antibodies. Additional embodiments of the invention provide polynucleotides encoding the hk2-specific proteins, vectors, host cells, and methods of making and using them.

No. of Pages : 387 No. of Claims : 236

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009534 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : CLAD 2XXX-SERIES AEROSPACE PRODUCT

(51) International classification	:C22C0021080000, C22F0001047000, C22C0021060000, C22C0021020000, B23K0035280000
(31) Priority Document No	:19195491.6
(32) Priority Date	:05/09/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/IB2020/057627 :13/08/2020
(87) International Publication No	:WO 2021/044239
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)ALERIS ROLLED PRODUCTS GERMANY GMBH
Address of Applicant :Carl-Spaeter-Straße 10 56070 Koblenz Germany
(72)**Name of Inventor :**
1)JACOBY, Bernd
2)BÜRGER, Achim
3)SPANGEL, Sabine Maria
4)MEYER, Philippe

(57) Abstract :
The invention relates to a rolled composite aerospace product comprising a 2XXX-series core layer and an Al-Mg alloy clad layer coupled to at least one surface of the 2XXX-series core layer, wherein the Al-Mg alloy is a 5XXX-series aluminium alloy comprising 0.4% to 4.8% Mg, and preferably 0.7% to 4.5% Mg.

No. of Pages : 16 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009535 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : FOOD PRODUCT COMPRISING A MUCILAGINOUS HYDROCOLLOID

(51) International classification	:A23L0029262000, A21D0013068000, A23L0029238000, A21D0002180000, A23L0029244000
(31) Priority Document No	:1910913.1
(32) Priority Date	:31/07/2019
(33) Name of priority country	:U.K.
(86) International Application No Filing Date	:PCT/GB2020/051843 :31/07/2020
(87) International Publication No	:WO 2021/019252
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)LO-DOUGH LIMITED
Address of Applicant :Dane Mill Bridgefield Street Rochdale Greater Manchester OL11 4EY U.K.
(72)**Name of Inventor :**
1)WALES, Robert
2)HOLDEN, Ben

(57) Abstract :
The present invention relates to a bakery food product produced from a mucilaginous hydrocolloid and a mannan-based hydrocolloid. The bakery food product is low fat and has a long shelf life, and a higher water resistance than traditional dough based foods. Also provided is a method for making the bakery food product, and a liquid mixture for making a bakery product. Also provided are dehydrated food products produced from a mucilaginous hydrocolloid and a mannan-based hydrocolloid.

No. of Pages : 41 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009536 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : COATING COMPOSITIONS

(51) International classification	:C08L0051080000, C08G0018480000, C10L0001160000, C08G0059500000, C08G0071040000
(31) Priority Document No	:62/890816
(32) Priority Date	:23/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/039055 :23/06/2020
(87) International Publication No	:WO 2021/040864
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)PRC-DESOTO INTERNATIONAL, INC.
Address of Applicant :12780 San Fernando Road Sylmar, California 91342 U.S.A.
(72)**Name of Inventor :**
1)FORTMAN, David J.
2)POLLUM, Marvin M., Jr.
3)KRILEY, Joseph P.
4)REARICK, Brian K.
5)FRENCH, Maria S.
6)NAKAJIMA, Masayuki

(57) Abstract :
The present invention is directed to compositions comprising a first component, a second component, and elastomeric particles. The first component comprises an epoxy-containing compound. The second component comprises a diamine comprising a cyclic ring and/or a polyamine comprising a cyclic ring. The diamine may chemically react with the epoxy-containing compound. Optionally, the cyclic ring of the diamine and/or the polyamine has at least one carbon positioned between the amino functional groups and the cyclic ring structure. Optionally, at least 50% by weight of the elastomeric particles comprise a styrene butadiene core based on total weight of the elastomeric particles. The present invention is also directed to methods of making the compositions, methods of coating a substrate, and coated substrates.

No. of Pages : 46 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009578 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : TIME DOMAIN RESOURCE DETERMINATION METHOD AND APPARATUS, AND TERMINAL DEVICE

(51) International classification	:H04W0072040000, H04W0072020000, H04N0021810000, G06F0016438000, G07C0001120000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT/CN2020/074765 :11/02/2020
(87) International Publication No	:WO 2021/159281
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.
Address of Applicant :No. 18, Haibin Road, Wusha, Chang'an, Dongguan, Guangdong 523860 China
(72)**Name of Inventor :**
1)ZHAO, Zhenshan
2)LIN, Huei-Ming

(57) Abstract :
Embodiments of the present application provide a time domain resource determination method and apparatus, and a terminal device. The method comprises: a terminal device determines a first time slot set in a first period; the terminal device selects partial time slots from the first time slot set according to a first bitmap, the partial time slots constituting time domain resources of a resource pool.

No. of Pages : 35 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009591 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SHORT SEGMENT GENERATION FOR USER ENGAGEMENT IN VOCAL CAPTURE APPLICATIONS

(51) International classification	:G10H0001360000, G06Q0050000000, H04L0012180000, H04N0021845000, H04N0005765000
(31) Priority Document No	:62/891412
(32) Priority Date	:25/08/2019
(33) Name of priority country	:U.S.A.
(86) International Application No Filing Date	:PCT/US2020/047768 :25/08/2020
(87) International Publication No	:WO 2021/041393
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SMULE, INC.
Address of Applicant :139 Townsend Street Suite 300 San Francisco, California 94107 U.S.A.
(72)**Name of Inventor :**
1)MOLDOVER, Jon
2)STEINWEDEL, David
3)SMITH, Jeffrey C.
4)COOK, Perry R.

(57) Abstract :
User interface techniques provide user vocalists with mechanisms for solo audiovisual capture and for seeding subsequent performances by other users (e.g., joiners). Audiovisual capture may be against a full-length work or seed spanning much or all of a pre-existing audio (or audiovisual) work and in some cases may mix, to seed further contributions of one or more joiners, a user's captured media content for at least some portions of the audio (or audiovisual) work. A short seed or short segment may span less than all (and in some cases, much less than all) of the audio (or audiovisual) work. For example, a verse, chorus, refrain, hook or other limited chunk of an audio (or audiovisual) work may constitute a short seed or short segment. Computational techniques are described that allow a system to automatically identify suitable short seeds or short segments. After audiovisual capture against the short seed or short segment, a resulting, solo or group, full-length or short-form performance may be posted, livestreamed, or otherwise disseminated in a social network

No. of Pages : 32 No. of Claims : 39

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009592 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SYSTEM COMPRISING CONTAINMENT EQUIPMENT FOR THE ASEPTIC TRANSFER OF A POWDER

(51) International classification	:B65G0069180000, B08B0015020000, B01L0001000000, G21F0007005000, F28F0009000000
(31) Priority Document No	:19405014.2
(32) Priority Date	:05/09/2019
(33) Name of priority country	:EPO
(86) International Application No Filing Date	:PCT/CH2020/000010 :12/08/2020
(87) International Publication No	:WO 2021/042217
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)SKAN AG
Address of Applicant :Kreuzstrasse 5 4123 Allschwil Switzerland
(72)**Name of Inventor :**
1)BROM, Vincent
2)LEHMANN, Frank Martin

(57) Abstract :
The system comprising containment equipment (1) is intended for the aseptic transfer of a powder (9), namely for emptying a container (6) filled with powder (9) into a collection container (7) and/or for filling a container (6) with powder (9) from a storage container (8). The containment equipment (1) has a working chamber (11) surrounded by a housing (10). A robot (3) is installed in the containment equipment (1), having an arm arrangement (31) that moves over a pivot range. If there is a collection container (7) it has an inlet leading from the working chamber (11), and if there is a storage container (8) it has an outlet leading off into the working chamber (11). The container (6) can be closed at least with a first closure element (61). The arm arrangement (31) is connected to a tool carrier (3), which is provided with at least the following at its base (30): clamping elements (32) for gripping the container (6); a vacuum lifter (33) for taking hold of the first closure element (61); and a passive part (31) of a double flap. A transfer head (4) is mounted at the inlet into the collection container (7) and/or at the outlet of the storage container (8), each protruding into the working chamber (11). The passive part (31) forms the double flap together with an active part (41) contained in the transfer head (4).

No. of Pages : 15 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/02/2022

(21) Application No.202217009593 A
(43) Publication Date : 15/04/2022

(54) Title of the invention : SOLID PASTE COMPOSITION FOR COOKING AND METHOD FOR PRODUCING SAME

(51) International classification	:G01N0033680000, C22C0038080000, A23K0020147000, C22C0021000000, D21H0019200000
(31) Priority Document No	:2019-158330
(32) Priority Date	:30/08/2019
(33) Name of priority country	:Japan
(86) International Application No Filing Date	:PCT/JP2020/031309 :19/08/2020
(87) International Publication No	:WO 2021/039544
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)MIZKAN HOLDINGS CO., LTD.
Address of Applicant :6, Nakamura-cho 2-chome, Handa-shi, Aichi 4758585 Japan
(72)**Name of Inventor :**
1)SUZUKI, Makoto
2)ENDO, Kiyoshi
3)TANGE, Yusuke
4)HIBI, Naruhiro
5)NAKAYAMA, Takuya
6)OGASAWARA, Yasushi
7)KAWAMURA, Yukiko
8)IHARA, Junichiro

(57) Abstract :
Provided is a solid paste composition for cooking, which has elasticity, suppresses a rubber-like texture, and has a good chewy texture. This composition satisfies the following (1) to (4): (1) containing 2.0 mass% or more of an insoluble dietary fiber in terms of dry mass; (2) containing 15 mass% or more of a starch in terms of dry mass; (3) containing 5.5 mass% or more of a protein in terms of dry mass; and (4) satisfying at least one of the following (4a) or (4b) when at least one composition frozen section A obtained from [Condition A] below is stained with Coomassie Brilliant Blue (CBB) and observed. (4a) The ratio of the number of parts to be stained with CBB, which have an area of at least 200 μm2 and a roundness coefficient of at least 0.3, to the number of parts to be stained with CBB which have an area of at least 30 μm2 is 3% or more. (4b) The ratio of the total area of parts to be stained with CBB, which have an area of at least 200 μm2 and a roundness coefficient of at least 0.3, to the image area of a cross-section of the composition is 0.3% or more. [Condition A] Said composition is heated in 90 °C water for 6 minutes, and is then frozen at -25 °C. The frozen composition is cut along any cut surface A to a thickness of 30 μm to obtain composition frozen section A.

No. of Pages : 81 No. of Claims : 44

CONTINUED TO PART- 2

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Application Details	
APPLICATION NUMBER	202231012984
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/03/2022
APPLICANT NAME	1 . Dr. Rupam Gupta Roy 2 . Dr. Girish V. Lakhekar 3 . Anurupa Gupta Roy Lodh 4 . Rajakumar B. R 5 . Binu Dennis
TITLE OF INVENTION	SHANK FOOT ORTHOSIS SYSTEM USING SECOND-ORDER SLIDING MODE CONTROLLER
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	royrupamgupta@gmail.com
ADDITIONAL-EMAIL (As Per Record)	rupamguptaroy05@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	06/10/2022
PUBLICATION DATE (U/S 11A)	15/04/2022

Application Status

APPLICATION STATUS	**Application referred u/s 12 for examination.**

View Documents

Filed → Published → RQ Filed → Under Examination → Disposed

In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

INTELLECTUAL PROPERTY INDIA
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GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022123279
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE

(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	425813
आवेदन सं. / Application No.	:	201821012547
फाइल करने की तारीख / Date of Filing	:	03/04/2018
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A UNIFIED SENSORLESS CONTROL SYSTEM AND METHOD OF DC-DC CONVERTERS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2018 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A UNIFIED SENSORLESS CONTROL SYSTEM AND METHOD OF DC-DC CONVERTERS as disclosed in the above mentioned application for the term of 20 years from the 3rd day of April 2018 in accordance with the provisions of the Patents Act,1970.

एकस्य कार्यालय THE PATENT OFFICE GOVT.OF INDIA भारत सरकार

अनुदान की तारीख : 20/03/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अप्रैल 2020 के तीसरे दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3rd day of April 2020 and on the same day in every year thereafter.

US010769236B2

(12) **United States Patent**
Sonawane et al.

(10) **Patent No.: US 10,769,236 B2**
(45) **Date of Patent: Sep. 8, 2020**

(54) **BATTERY MODELS, SYSTEMS, AND METHODS USING ROBUST FAIL-SAFE ITERATION FREE APPROACH FOR SOLVING DIFFERENTIAL ALGEBRAIC EQUATIONS**

(71) Applicants: **University of Washington**, Seattle, WA (US); **Washington University**, St. Louis, MO (US)

(72) Inventors: **Dayaram Sonawane**, Seattle, WA (US); **Manan Pathak**, Seattle, WA (US); **Venkat Subramanian**, Seattle, WA (US); **Matthew Lawder**, St. Louis, MO (US)

(73) Assignees: **University of Washington**, Seattle, WA (US); **Washington University**, St. Louis, MO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 309 days.

(21) Appl. No.: **15/745,984**

(22) PCT Filed: **Jul. 20, 2016**

(86) PCT No.: **PCT/US2016/043188**
§ 371 (c)(1),
(2) Date: **Jan. 18, 2018**

(87) PCT Pub. No.: **WO2017/015396**
PCT Pub. Date: **Jan. 26, 2017**

(65) **Prior Publication Data**

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Related U.S. Application Data

(60) Provisional application No. 62/194,678, filed on Jul. 20, 2015.

(51) **Int. Cl.**
H02J 7/00 (2006.01)
G06F 17/13 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G06F 17/13*** (2013.01); ***G06F 30/20*** (2020.01); ***H01M 10/44*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC H02J 7/0021; H02J 7/0048
(Continued)

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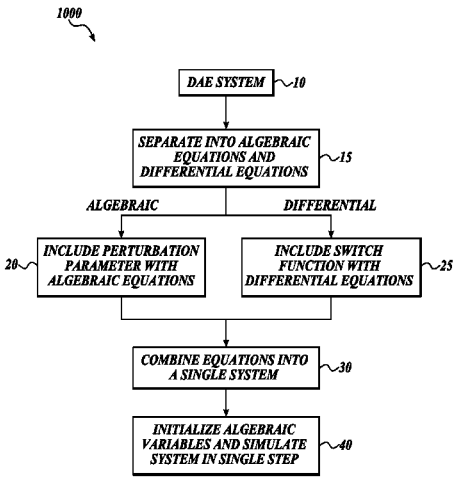
(Continued)

Primary Examiner — Jerry D Robbins
(74) *Attorney, Agent, or Firm* — Christensen O'Connor Johnson Kindness PLLC

(57) **ABSTRACT**

Battery models using robust fail-safe iteration free approach for solving Differential Algebraic Equations, and associated systems and methods are disclosed. In one embodiment, a
(Continued)



method includes generating a model of the rechargeable battery; determining one or more initial conditions for one or more algebraic variables of the model using a solver; holding differential variables of the model static by a switch function while determining the one or more initial conditions; applying the initial conditions to the model by the switch function; and determining one or more parameters for the rechargeable battery by solving the algebraic and differential equations.

24 Claims, 10 Drawing Sheets

(51) **Int. Cl.**

H01M 10/44	(2006.01)
G06F 30/20	(2020.01)
G06F 111/10	(2020.01)

(52) **U.S. Cl.**

CPC ***H01M 10/441*** (2013.01); ***H02J 7/0021*** (2013.01); ***H02J 7/0047*** (2013.01); *G06F 2111/10* (2020.01); *H01M 2220/20* (2013.01); *H02J 7/0048* (2020.01)

(58) **Field of Classification Search**

USPC 320/137

See application file for complete search history.

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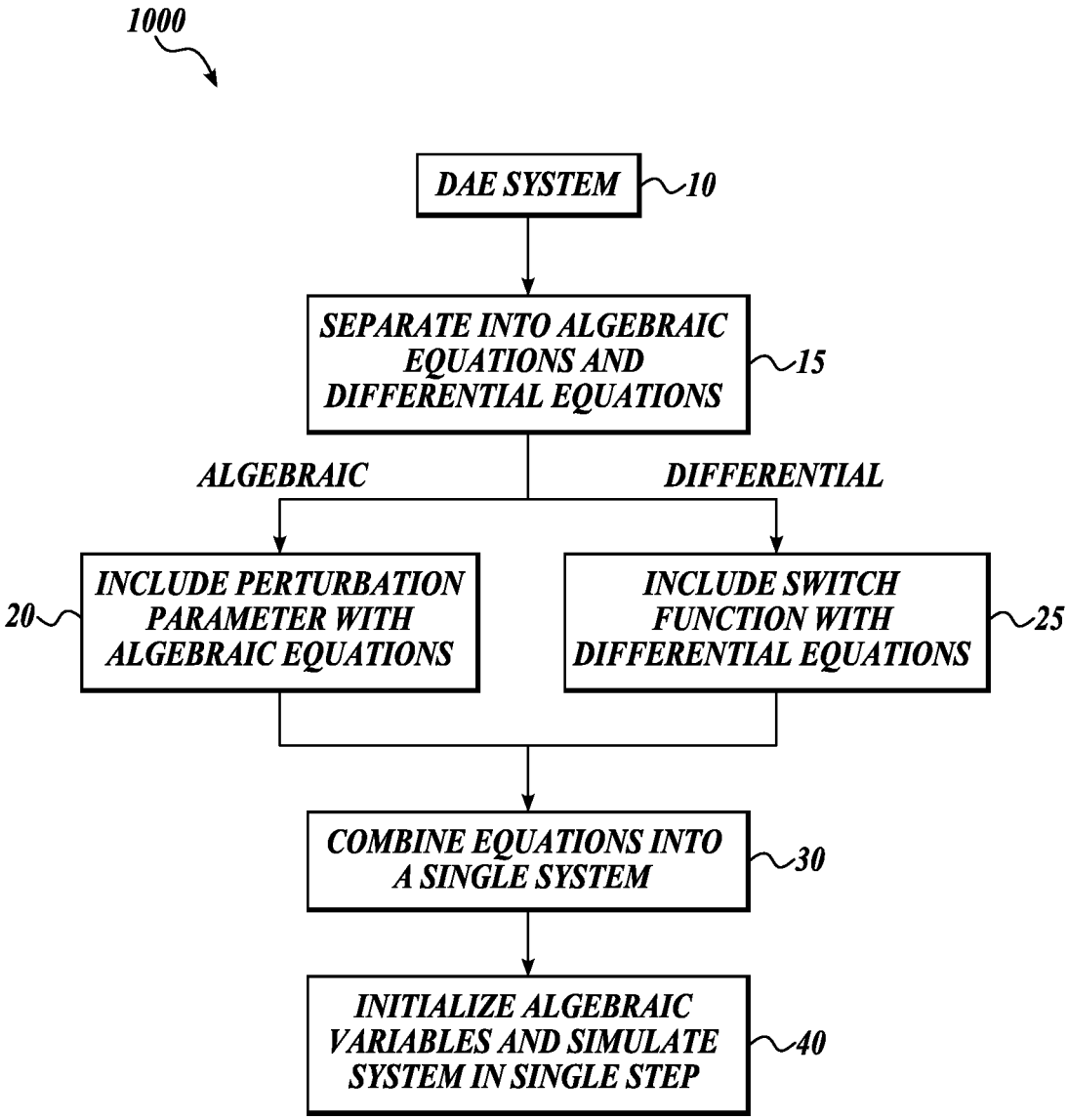
1000
DAE SYSTEM
10
SEPARATE INTO ALGEBRAIC EQUATIONS AND DIFFERENTIAL EQUATIONS
15
ALGEBRAIC
DIFFERENTIAL
20
INCLUDE PERTURBATION PARAMETER WITH ALGEBRAIC EQUATIONS
INCLUDE SWITCH FUNCTION WITH DIFFERENTIAL EQUATIONS
25
COMBINE EQUATIONS INTO A SINGLE SYSTEM
30
INITIALIZE ALGEBRAIC VARIABLES AND SIMULATE SYSTEM IN SINGLE STEP
40

Fig. 1.

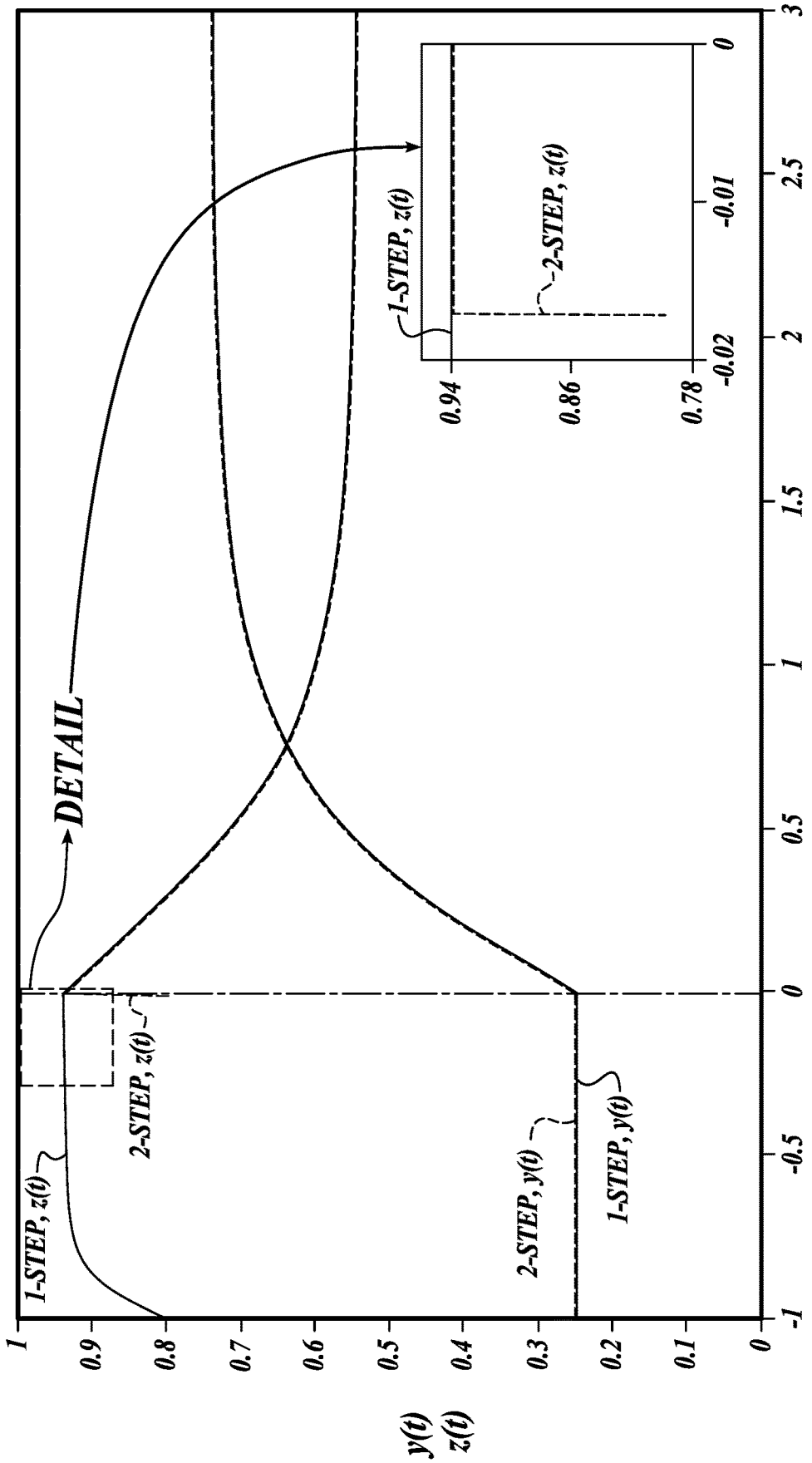
DETAIL
1-STEP, z(t)
2-STEP, z(t)
2-STEP, y(t)
1-STEP, y(t)
y(t)
z(t)
t, time (s)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.5
0
0.5
1
1.5
2
2.5
3
0.94
0.86
0.78
-0.02
-0.01
0

Fig.2.

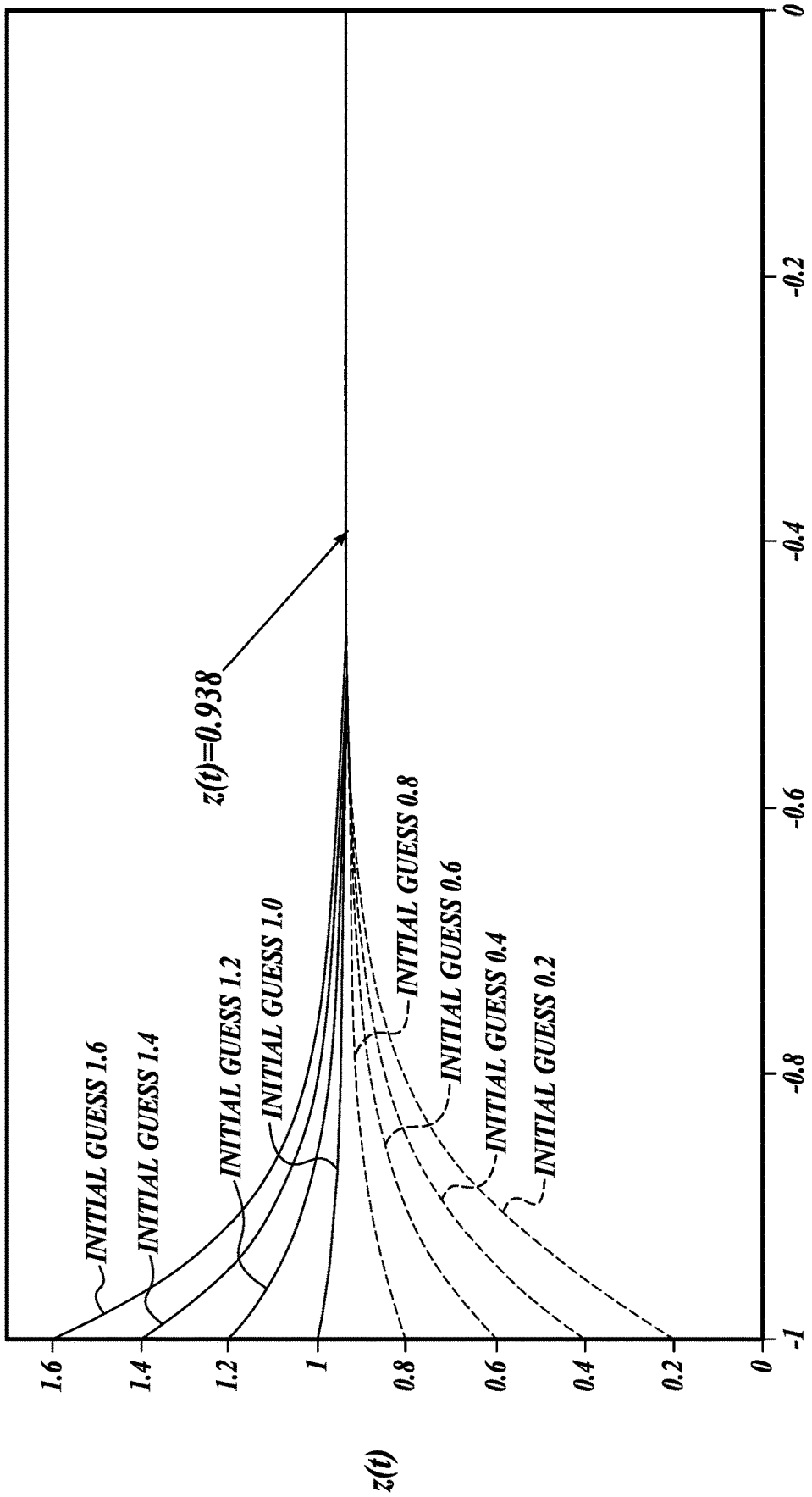
z(t)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-1
-0.8
-0.6
-0.4
-0.2
0
t, time (s)
z(t)=0.938
INITIAL GUESS 1.6
INITIAL GUESS 1.4
INITIAL GUESS 1.2
INITIAL GUESS 1.0
INITIAL GUESS 0.8
INITIAL GUESS 0.6
INITIAL GUESS 0.4
INITIAL GUESS 0.2

Fig. 3.

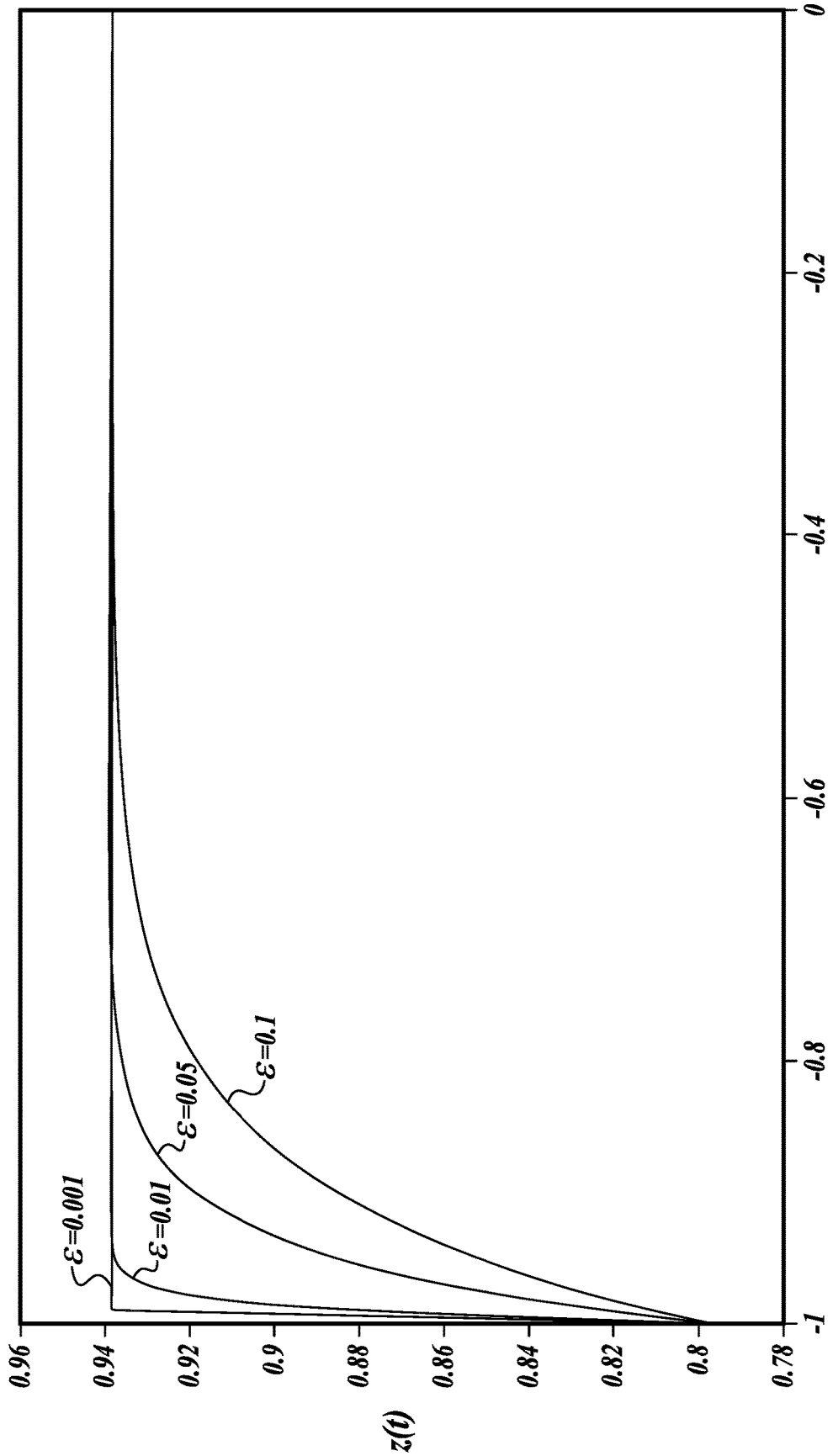
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
0.8
0.78
z(t)
0
-0.2
-0.4
-0.6
-0.8
-1
t, time (s)
ε=0.001
ε=0.01
ε=0.05
ε=0.1

Fig. 4.

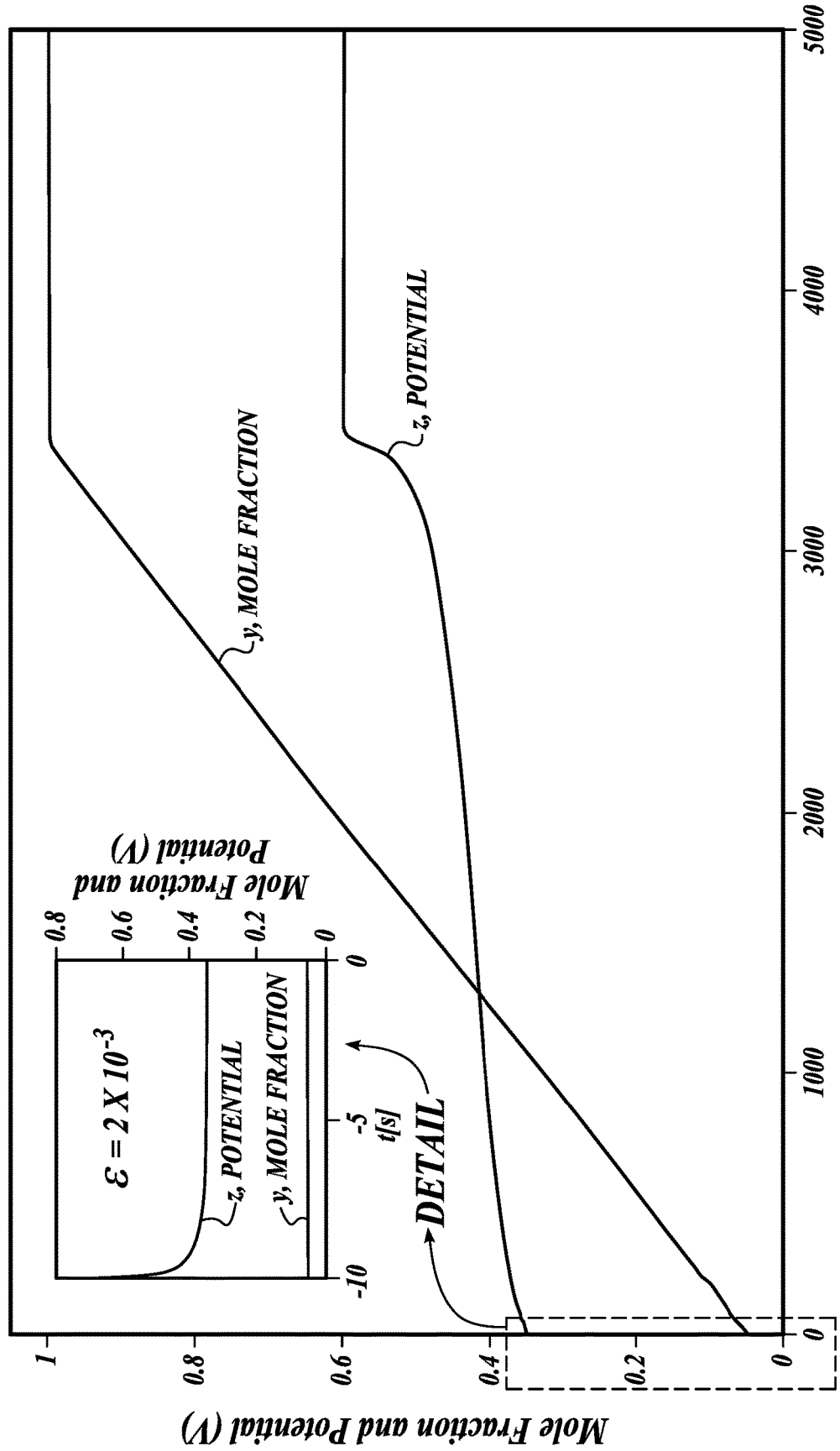
Mole Fraction and Potential (V)
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
t, time (s)
y, MOLE FRACTION
z, POTENTIAL
DETAIL
ε = 2 X 10^-3
z, POTENTIAL
y, MOLE FRACTION
-10
-5
t[s]
0
0.2
0.4
0.6
0.8
Mole Fraction and Potential (V)

Fig. 5.

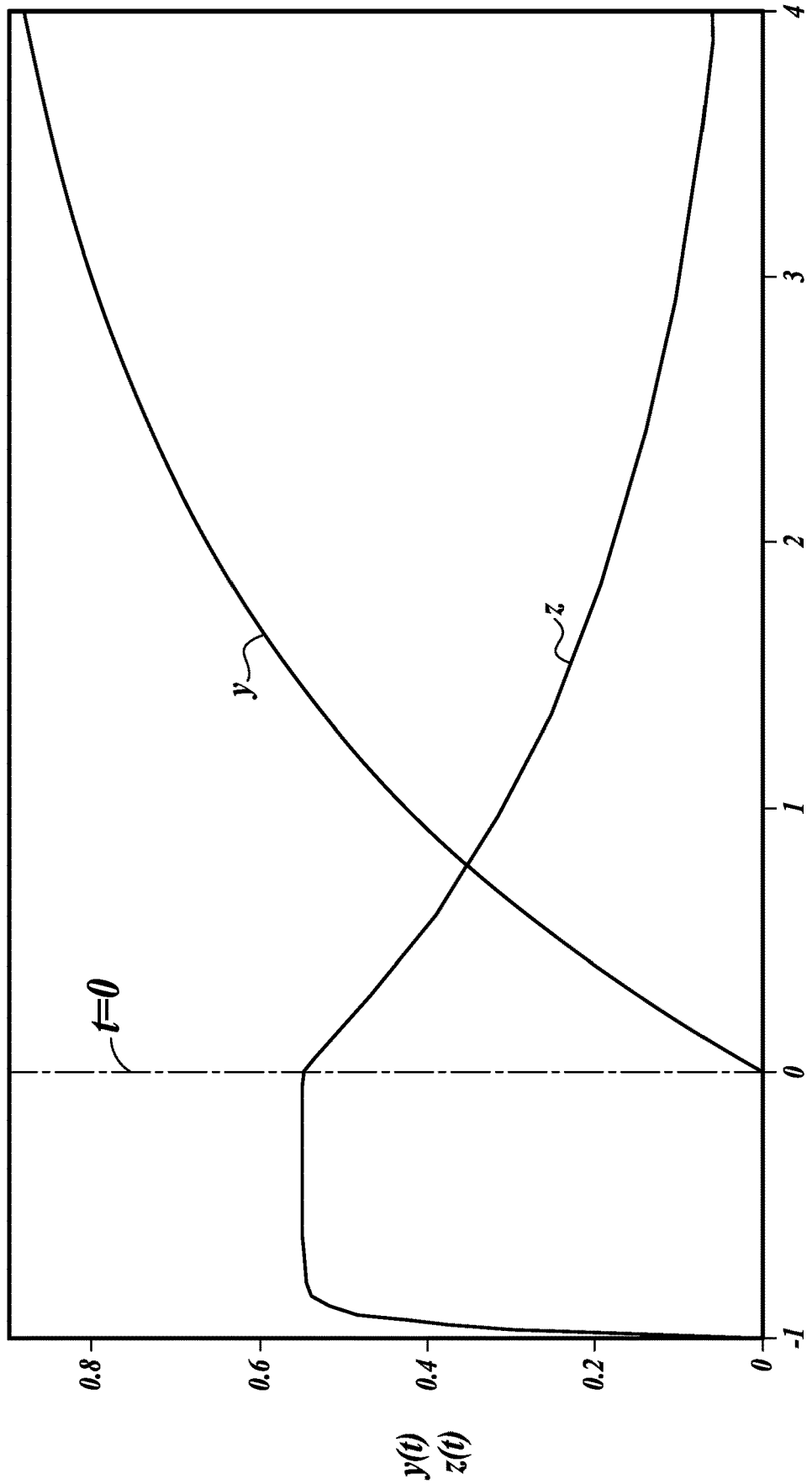

Fig. 6.

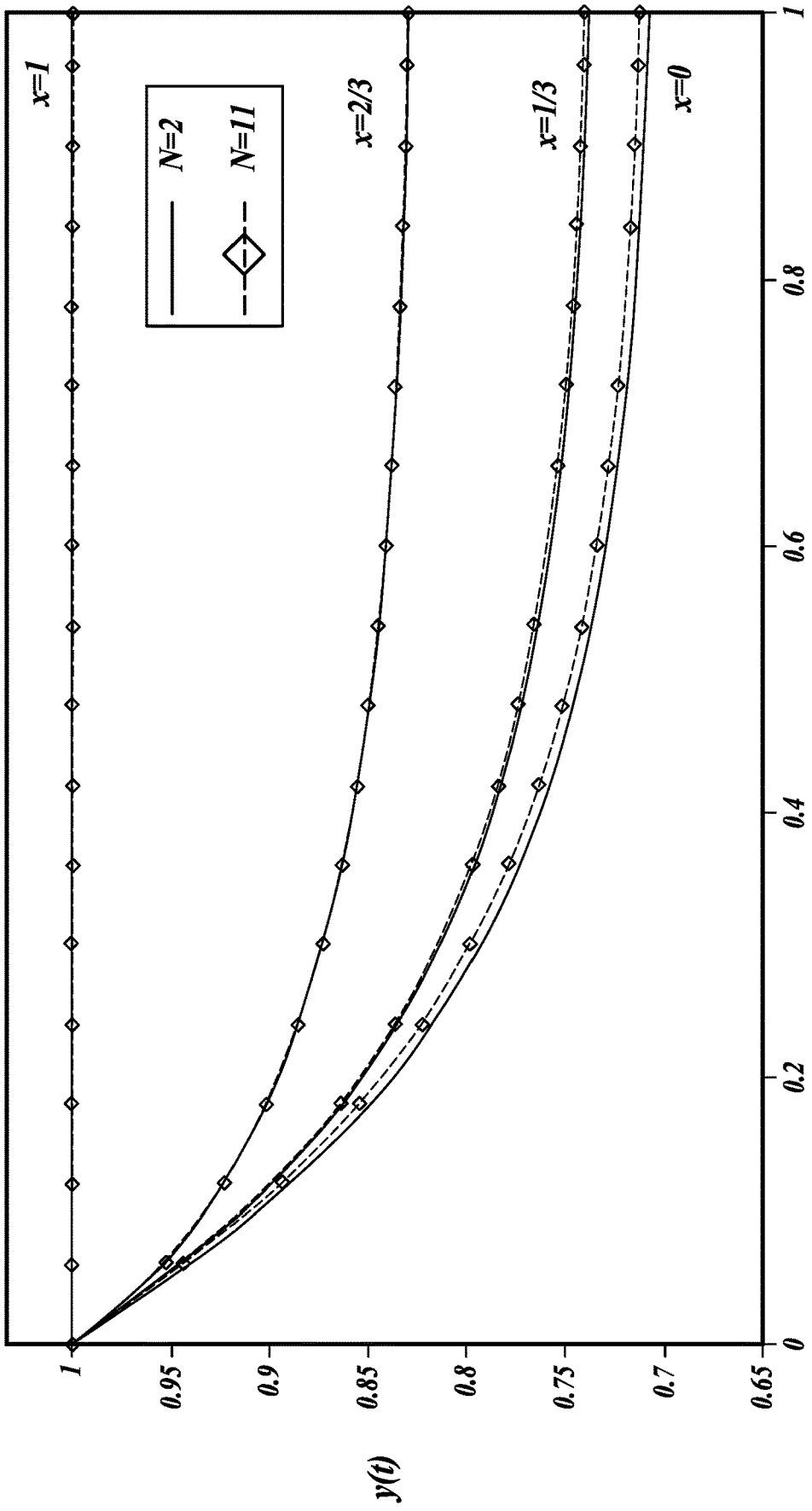
x=1
x=2/3
x=1/3
x=0
N=2
N=11
y(t)
t, time (s)
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0
0.2
0.4
0.6
0.8
1

Fig. 7.

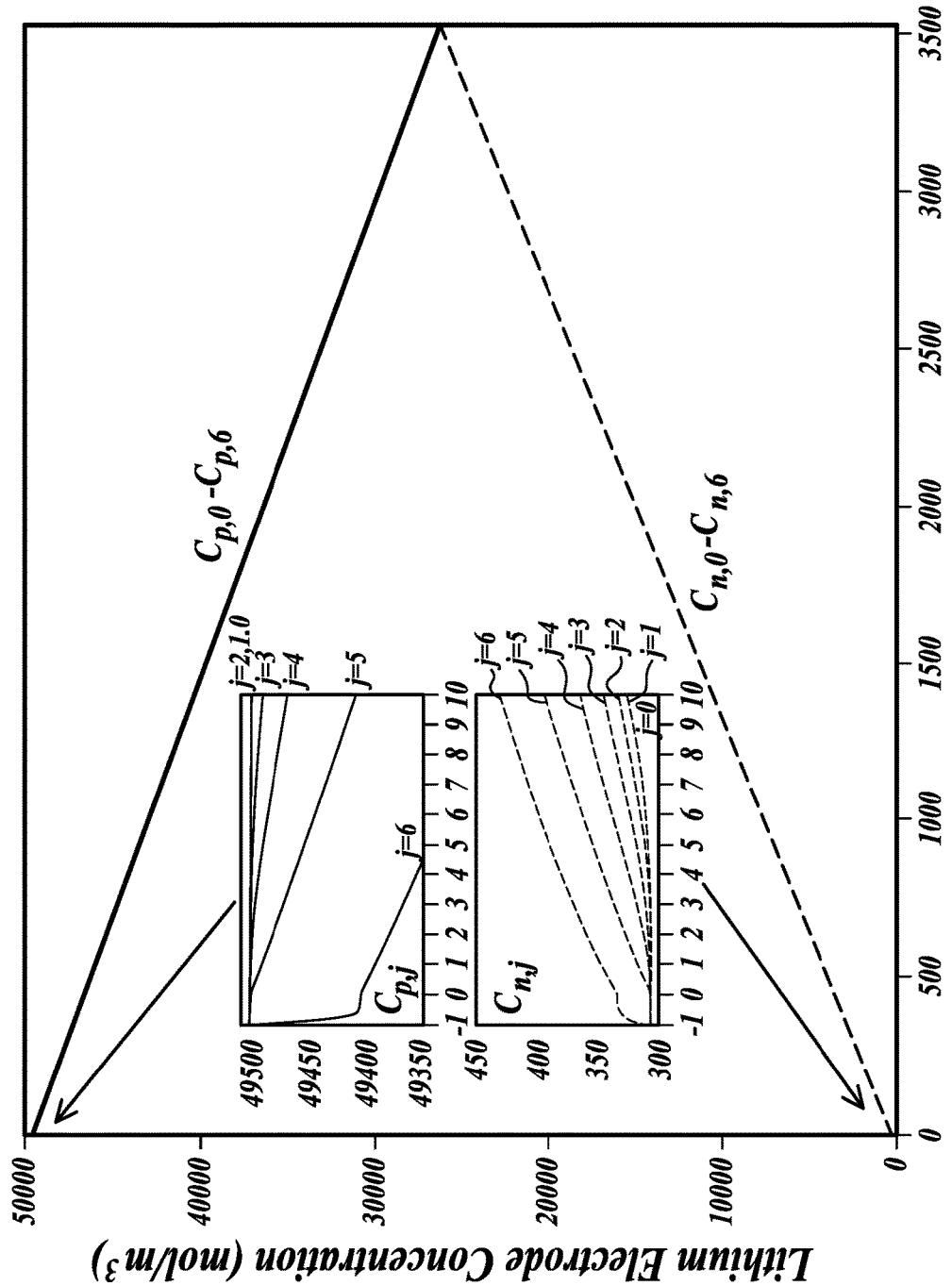
Lithium Electrode Concentration (mol/m3)
t, time (s)
$C_{p,0}$-$C_{p,6}$
$C_{n,0}$-$C_{n,6}$
C_{pj}
C_{nj}
j=0
j=1
j=2
j=3
j=4
j=5
j=6
j=2,1.0

Fig. 8.

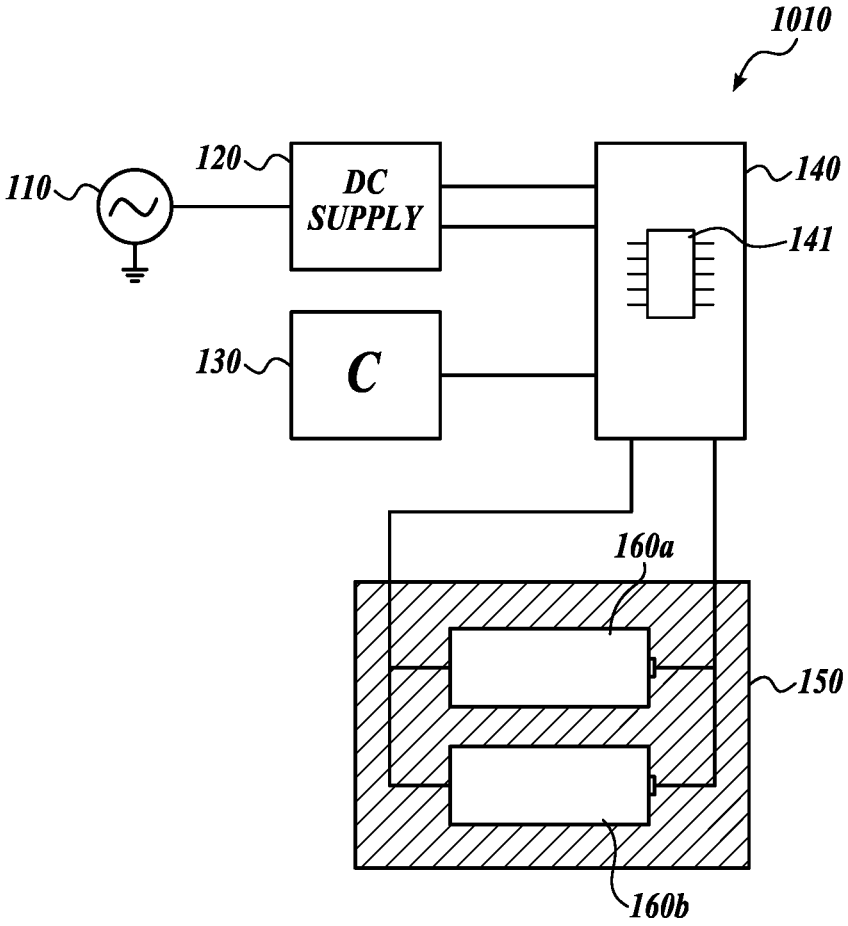

Fig.9.

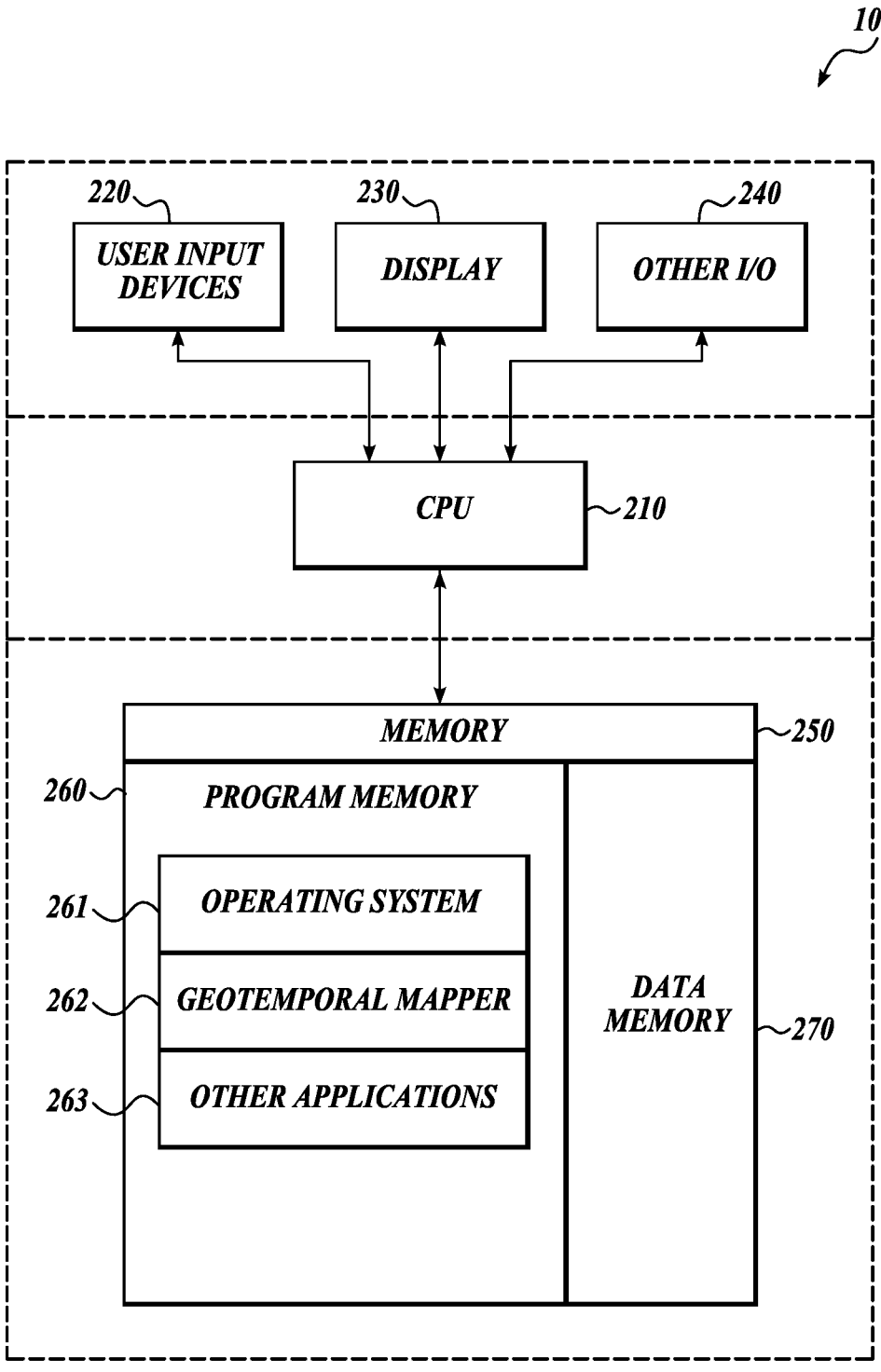
1020
220
USER INPUT DEVICES
230
DISPLAY
240
OTHER I/O
CPU
210
MEMORY
250
260
PROGRAM MEMORY
261
OPERATING SYSTEM
262
GEOTEMPORAL MAPPER
263
OTHER APPLICATIONS
DATA MEMORY
270

Fig. 10.

BATTERY MODELS, SYSTEMS, AND METHODS USING ROBUST FAIL-SAFE ITERATION FREE APPROACH FOR SOLVING DIFFERENTIAL ALGEBRAIC EQUATIONS

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 62/194,678, filed Jul. 20, 2015, the disclosure of which is hereby incorporated by reference in its entirety.

STATEMENT OF GOVERNMENT LICENSE RIGHTS

This invention was made with Government support under the Advanced Research Projects Agency—Energy (ARPA-E) award No. DE-AR0000275 awarded by the United States Department of Energy (DOE). The Government has certain rights in the invention.

FIELD OF THE INVENTION

The present invention relates generally to chargeable batteries, and more particularly relates to methods and apparatuses for improving efficiency, energy density, temperature, and/or life cycle associated with charging/discharging of the batteries.

BACKGROUND

Rechargeable batteries have become an essential part of modern electronics, for example, in smart phones, computers, cameras, cars, unmanned aerial vehicles, and other devices. For instance, lithium-ion (Li-ion) batteries are a popular choice as an energy storage medium due to their relatively large energy density. However, operating a Li-ion battery too aggressively can lead to a reduced cycle life and unpredictable thermal runaway reactions. Furthermore, charging of the Li-ion batteries may take too long time or be too inefficient for a specific purpose. These challenges reduce the usefulness of the Li-ion batteries.

In some instances, predictive physical models can be used to optimize the behavior of the rechargeable batteries. For example, based on the predictive physical models, battery charging/discharging can be selected such that, for example, the charging time is shorter, the temperature of the battery is lower, or the life of the battery is longer. With predictive physical models, often the representative system of equations includes a combination of ordinary differential equations (ODEs), partial differential equations (PDEs), and algebraic equations (AEs). The PDEs are often the governing equations of the system (e.g., a battery charging system) that vary in both space and time. When discretizing these PDEs spatially, the PDEs are reduced to a set of ODEs and AEs. This resulting combined set of ODEs and AEs is known as a set of differential algebraic equations (DAEs). In typical physical systems, the ODEs will often represent most of the governing equations, while the AEs act as constraints applied to the system to ensure that the solution accurately reflects the physical possibilities (e.g., conservation laws, boundary conditions, etc.).

For a system of DAEs, a set of consistent initial conditions (ICs) must be provided in order to solve the system with standard solvers. In some cases, even small deviations from consistent ICs will cause the DAE solver to fail. Therefore, some solvers have initialization routines that calculate consistent ICs from starting guesses. However, these routines add computational time and often require specific solvers to obtain the ICs used by the primary DAE solver.

Some conventional IC estimates use non-physical approximations such as setting differential variable gradients to zero initially. Since the true value of the ICs may be significantly different from the starting guess, this approach may create solver inefficiencies for the few cases that these solvers are able to solve. Furthermore, if the true value of the ICs is sufficiently different from the zero-gradient value, the DAE solver may fail.

Some conventional technologies calculate the ICs of differential and algebraic variables separately using an Euler backward step with a very small step size in order to obtain values very near the initial time. However, these conventional technologies also create solver inefficiencies due to the very small step size used to calculate the ICs, which requires a significant computational effort for calculating the ICs.

Other conventional technologies use successive linear programming, a Taylor series approximation, or a Laplace method to find ICs. However, these methods may also require a significant computational effort, or may produce ICs that are not sufficiently accurate for the DAE solver. Therefore, a need remains for battery charging/discharging technologies that are based on efficient predictive models.

DESCRIPTION OF THE DRAWINGS

The foregoing aspects and the attendant advantages of this invention will become more readily appreciated with reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:

FIG. **1** is a flow chart of a single-step modeling method in accordance with an embodiment of the presently disclosed technology.

FIG. **2** is a graph of comparison between the conventional two-step method and inventive single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **3** is a graph of initialization periods for different initial algebraic guesses in the single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **4** is a graph of a convergence for several different perturbation values in accordance with an embodiment of the presently disclosed technology.

FIG. **5** is a graph of the single-step solution for a full charge of an electrode in accordance with an embodiment of the presently disclosed technology.

FIG. **6** is a graph of an initialization and a simulation for the single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **7** is a graph of a solution of ADE; DAEs using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology.

FIG. **8** is a graph of a solution of a single particle model using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology.

FIG. **9** is a partially schematic view of a battery charging system in accordance with an embodiment of the presently disclosed technology.

FIG. **10** is a block diagram of a controller for the battery charging system in accordance with an embodiment of the presently disclosed technology.

DETAILED DESCRIPTION

Specific details of several embodiments of battery charging and discharging are described. The inventive battery charging/discharging is based on numerical solutions of the physical equations that govern the battery charging/discharging. In some embodiments, the inventive technology uses a single-step method that includes an iteration-free system initialization to obtain consistent initial conditions (ICs), followed by solving a governing set of differential algebraic equations (DAEs) using explicit solvers. In at least some embodiments, the exact knowledge of the ICs is not needed for solving the DAEs. Since the iterations are not needed, the initialization (e.g., setting the ICs) and the DAE simulation may be performed by a single solver using a suitable switch function. Furthermore, with the single-step method, the DAE equations may be solved using an explicit (i.e., non-iterative) solver. The ICs used in the single-step method would often be too inaccurate for the conventional two-step technologies.

In some embodiments, a perturbation initialization is used to estimate the ICs for the algebraic variables, followed by solving the DAEs based on the consistent ICs obtained at the first step. In some embodiments, solving the differential (D) and algebraic (A) equations of the DAEs is combined into one solver by using a switch function (e.g., a hyperbolic tangent function). Such a switch function constrains the differential variables while the perturbation method searches for consistent ICs for the algebraic variables. The continuous nature of switch function allows for correction of inconsistent converged ICs that occurs under large perturbation values. This extension of allowable consistent converged ICs helps to expand the robustness of the single-step method. In some embodiments, using a single-step approach increases the robustness of the solution method by allowing for a larger perturbation values to relatively rapidly calculate the ICs, while enabling explicit ODE solvers to solve nonlinear DAEs directly (i.e., without iterations typically required to solve the implicit systems of equations). In at least some embodiments, the proposed approach does not require the nonlinear solvers for the initialization subroutines that find consistent ICs. Based on the solution of the governing DAE equations, different parameters for rechargeable batteries can be determined (e.g., charging/discharging current, charging/discharging voltage, temperature of the battery, peak efficiency of the battery, optimal number of charging/discharging cycles, etc.).

General DAE System

A general DAE system is shown in Equations 1.1 and 1.2 in a semi-explicit form.

$$\frac{dy}{dt} = f(t, y, z) \quad \text{Eq. 1.1}$$

$$0 = g(t, y, z) \quad \text{Eq. 1.2}$$

where y are the differential variables, z are the algebraic variables, and t is the time. Furthermore, function g is differentiable and dg/dt is non-singular. The system of DAEs shown above often arises from combining equations governing physical phenomena with constraints, or by discretizing a PDE's spatial variables while keeping time continuous (e.g., as shown in Examples 4 and 5 below).

In order to solve the system of DAEs shown in Equations 1.1 and 1.2, ICs for all variables are given as:

$$t=0\ y(0)=y_0\ z(0)=z_0 \quad \text{Eq. 1.3}$$

However, the exact values for consistent z_0 are not always readily available. For conventional DAE solvers (without initialization routines), ICs must be consistent with the system of DAEs or a solution is not obtainable, because without the consistent ICs the solver fails. Variables present in the AEs (e.g., Equation 1.2) are limited to those sets that directly satisfy the algebraic limits. A system that includes ODEs only will often offer a wider range of consistent ICs, because the equations are the derivatives (e.g., they change over time) of the system variables rather than the variable values. However, combining AEs to an ODE system increases the stiffness of the system and often necessitates a priori knowledge of the exact ICs of the system.

Perturbation Method for Solving AEs

In some embodiments of the inventive technology, in order to loosen the restriction of consistency on the algebraic variables (i.e., in order to make the system of DAEs less stiff), a perturbation approach with a perturbation parameter ε is used such that:

$$g(t) = \lim_{\varepsilon \to 0} g(t+\varepsilon) = 0 \quad \text{Eq. 1.4}$$

$$g(t+\varepsilon) = 0 \quad \text{Eq. 1.5}$$

$$-\varepsilon \frac{dg(t)}{dt} = g(t) + O(\varepsilon^2) \quad \text{Eq. 1.6}$$

Once in perturbation form shown in Equations 1.4-1.6, the AEs can be solved first (without any ODEs, but using the given ICs for the differential variables) to find consistent initial values for all algebraic variables. The algebraic variable values found from the above perturbation approach will be consistent with the given differential variable ICs and the values can be used with the initial system of DAEs as ICs as discussed below.

Solving the DAEs Using the ICs Obtained from the AEs

When solving the system of DAEs, the set is solved in its initial form (in the example of Equations 1.1 and 1.2, a semi-explicit form), and the consistent ICs from initialization (i.e., from the Eqs. 1.4-1.6) are provided. Using this approach provides an initialization routine that produces consistent ICs to be fed into the solver along with the original system. The initialization routine allows for a wider range of initial guesses to be used for the algebraic variables of the system. Even though the above perturbation method is generally robust, the perturbation values must be small enough for the converged value of the algebraic variables to be consistent. Otherwise, if the perturbation values ε are too large, the AEs may not converge to consistent ICs.

Therefore, the above procedure includes a combination of: (1) initialization using a solver for obtaining the consistent ICs of the algebraic variables, and (2) solving the DAE system using the consistent ICs obtained from (1). Instead of solving tasks (1) and (2) separately using dedicated solvers for each of the tasks, with some embodiments of the inventive technology the tasks (1) and (2) can be combined into a single-step method as follows.

Switch Function Applied to ODEs

In some embodiments, a switch function can be used to hold the differential variables static (i.e., constant or

unchanged) while the algebraic variables are subjected to the perturbations to find their consistent ICs using a numerical solver. Next, the differential variables can be unmasked and the system simulation (i.e., the DAEs simulation) begins in a continuous manner using the same solver. In some embodiments, the switch function gradually applies the ICs to the DAEs without a discrete jump. Therefore, the single-step method combines the initialization of the algebraic variables (i.e., obtaining the ICs) and the solution of the system (i.e., the solution of the DAEs that describe the physical system). In at least some embodiments, the single-step approach results in more robust solutions, because the system stiffness is reduced, enabling an increase in the perturbation value used to calculate the ICs for faster calculation of the ICs.

In some embodiments, the switch function applied to the ODEs is a hyperbolic tangent:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))) \quad \text{Eq. 1.7}$$

where q is a weighting factor determining the discreteness of the function, and t_j is the time allowed for the perturbation approach to find consistent algebraic ICs. The value of t_j can be scaled depending on the value of ε used for the perturbation. Subtracting t_j from the total solution time provides the original (simulation) time variable. The switch function can be applied to the ODEs as:

$$\frac{dy}{dt} = fT_H \quad \text{Eq. 1.8}$$

The switch function allows for the derivative of the differential variables to be set to zero for the duration of the initialization of the algebraic variables and be set to the function f for the simulation after initialization. The adaptive solvers used on the system can determine time steps as needed from time t=0 to time=tj, and will find the consistent IC for z. In at least some embodiments, the switch function approximates a discrete jump with a continuous function.

The continuous nature of the switch function also allows for minor corrections of the converged ICs at the end of the initialization time (i.e., the beginning of the simulation time for the DAEs). As a result, the converged ICs allow for less restrictive perturbation values (e.g., a larger perturbation value or an initial guess that is further away from the correct value) when compared to the conventional methods in which the two steps are calculated separately. In at least some embodiments, the inventive technology also saves a considerable amount of time that the conventional two-step method needs for stopping the solver after initialization, substituting the consistent initial values, and starting the ODE solver again for simulating the entire system of DAEs. Additionally, in at least some embodiments, combining the two steps reduces the time required to properly format the set of equations for solving.

Combining the DAEs into a System of ODEs

In some embodiments, the system of DAEs (e.g., the system described by Equations 1.1 and 1.2) can be restructured into a single-step ODE system as shown in Equations 1.9 and 1.10 below:

$$\frac{dy}{dt} = fT_H \quad \text{Eq. 1.9}$$

-continued

$$\varepsilon\frac{dg}{dt} = -g \quad \text{Eq. 1.10}$$

In some embodiments, the perturbed form of the AEs (e.g., Equation 1.10) remains in implicit form because its left hand side incudes differential variables or their derivatives (e.g., y or dy/dt). This implicit form of Equation 1.10 may be acceptable for small sets of equations, but may cause solvers to fail for large sets of equations. Therefore, for large sets of equations, the derivatives of the equations can be removed by substituting the original ODE equations (e.g., Equation 1.1). Then ICs may be substituted for the differential variables that remain. The explicit form can be written as:

$$\varepsilon\frac{dg}{dt}_{\left(at\ y=y_0, z=z_0, \frac{dy}{dt}=f_0\right)} = -g \quad \text{Eq. 1.11}$$

Equation 1.11 can replace Equation 1.10 in the single-step method. As a result of the substitution, both the initialization and the solution of the system of DAEs may be obtainable by the explicit solvers. After the substitution, Equations 2.9, 2.10, and 2.11 become ODEs that can be solved using explicit solvers in time or linearly implicit solvers in time. For example, in Maple, the linearly implicit stiff solver Rosenbrock may be used to solve these systems.

FIG. **1** is a flow chart **1000** of a single-step modeling method in accordance with an embodiment of the presently disclosed technology. In step **10**, a system of differential algebraic equations (DAE) is formed. Such a system of equations may represent a physical problem to be solved. In step **15**, the algebraic equations (AEs) and differential equation (DEs) are separated. In step **20**, the AEs can be solved by, for example, a perturbation method, to calculate the ICs from the AEs. In step **25**, the DEs are combined with a switch function that holds the variables of the DEs static (e.g., constant or near constant), while the variables in the AEs find consistent values using, e.g., a perturbation method of step **20**. In some embodiments, the switch function of step **25** can be tan h. In step **30**, the AEs and DEs are combined into a single system of DAEs. In step **40**, the algebraic values are initialized with ICs, the switch function allows solving of the DEs to start, and the DAEs are solved. In some embodiments, the DAEs can be solved using an explicit solver.

EXAMPLES

The examples below illustrate some applications of the single-step method. Some of the described examples are directed to a stiff electrochemical system. The examples include solving implicit ordinary differential equations (ODE) systems after converting them into a DAE form. The method described with respect to FIG. **1** is applied to Examples 1-5 below. In the Figures that show simulation results for examples 1-5, the initialization time is shown as negative, and the real simulation time of the problem is shown as positive.

Example 1

Index-1 DAE (One Algebraic and One Differential Variable)

In the system of equations below, y is the differential variable and z is the algebraic variable:

$$\frac{dy(t)}{dt} = -y(t)^2 + z(t) \quad \text{Eq. 1.12}$$

$$\cos(y(t)) - \sqrt{z(t)} = 0 \quad \text{Eq. 1.13}$$

For the system of Equations 1.12 and 1.13, the differential variable IC can be set as:

$$y(0)=0.25 \quad \text{Eq. 1.14}$$

For conventional methods, standard DAE solvers need the consistent IC for z:

$$z(0)=\cos(0.25)^2 \approx 0.938791 \quad \text{Eq. 1.15}$$

Standard solver packages may fail when the exact algebraic IC is not given (e.g., if the solver did not include initialization routines). The single-step proposed approach is applied below. A switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(1000)(t-1))) \quad \text{Eq. 1.16}$$

This switch function can be applied to the right hand side of the differential equation (DE) so that:

$$\frac{dy(t)}{dt} = (-y(t)^2 + z(t))\left(\frac{1}{2} + \frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.17}$$

Additionally, a perturbation can be applied to the algebraic equation (AE) such that

$$\varepsilon\left(\sin(y(t))\left(\frac{dy(t)}{dt}\right) + \frac{1\sqrt{z(t)}}{2z(t)}\frac{dz(t)}{dt}\right) = \cos(y(t)) - \sqrt{z(t)} \quad \text{Eq. 1.18}$$

The system of Equations 1.16 and 1.17 can be solved with an explicit (or linearly implicit) ODE solver. The IC of the algebraic variable does not have to be known a priori, but rather the combination of the switch function and perturbation can allow the IC for the algebraic variable to reach steady state during the first one second of the solution time, because T_H will be 0, therefore holding the differential variable constant during this initialization. After one second of the solution time, T_H achieves value one, and the solution of the system 1.16, 1.17 will start based on the ICs. In at least some embodiments, a reasonable initial guess must still be provided for the starting value of z. The time of initialization must be removed from the solution time in order to achieve the real simulation time of the system.

When compared to the conventional two-step perturbation approach, in some embodiments of the inventive technology the addition of the switch function allows for the initialization and solution to be calculated together in a single-step. In both the conventional two-step and the inventive single-step approaches, the algebraic variables generally converge to the same value for the same perturbation parameter ε. In general, smaller values of ε increase the accuracy of the converged value by ensuring that the converged value can be used as a consistent IC. However, a relatively small ε also increases the stiffness of the system. Conversely, a larger ε reduces the stiffness, but decreases the accuracy of the converged value. Furthermore, when ε becomes large enough, the converged value no long works as a consistent IC for a system of DAEs. The conventional two-step perturbation approach also typically requires much smaller values of perturbation for the initialization, therefore requiring a greater computational effort. Conversely, a too large E causes the two-step approach to fail once the converged value is outside of the consistent IC limit.

Unlike the conventional two-step method, the single-step method allows for a correction to the converged value at the end of initialization because of the continuous nature of the switch function. For instance, as the switch function starts to unfreeze the ODE variables, the converged value of the algebraic variable (as well as the IC for the differential variable) can further correct to consistent values. This correction will introduce a small amount of error, but it allows for a more robust method of solving by increasing the allowable converged value for the algebraic variables which will still solve the DAEs of the system.

In the example 1, the conventional two-step approach using Maple's dsolve (a Rosenbrock type solver) requires a converged value y(0) to satisfy:

$$0.9387903 < y(0) < 0.9387922 \quad \text{Eq. 1.19}$$

For the inventive single-step method that uses the switch function, the system of Equations 1.12, 1.13 can be solved with less than 0.001 error for all points after t=0.1 s of simulation time even if the requirement for the converged values y(0) is relaxed to:

$$0.9377018 < y(0) < 0.9398806 \quad \text{Eq. 1.20}$$

In at least some embodiments, a wider range of acceptable y(0) may increase the robustness of the solver and may allow for a wider allowable range of perturbation parameter ε. For example, if a starting guess of z(0)=0.8 was applied, the conventional two-step perturbation solution would require no larger than $\varepsilon=1.1\times10^{-6}$ in order to obtain a solution for initialization that is consistent for the system of DAEs. However, the inventive technology that uses a single-step method can solve the same system of equations with ε=0.1 (or even larger), as discussed with reference to FIG. **2** below.

FIG. **2** is a graph of results comparison between the conventional two-step method and inventive single-step method in accordance with an embodiment of the presently disclosed technology. The horizontal axis represent the time in seconds. The vertical axis represents values of y(t) and z(t) from the system of Equations 1.12, 1.13. The value q in Equation 1.7 is set to 1000. In at least some embodiments, the value of q affects the discreteness of the switch function and can increase the robustness of the solution. A detail graph shows the initialization of z(t) for the times that are close to t=0. FIG. **2** illustrates that both the conventional two-step method and the inventive single-step method can solve the system of Equations 1.12, 1.13. However, as explained in more detail with reference to FIGS. **3** and **4** below, the inventive single-step method can produce accurate results for a relatively wide ranges of initial guesses of z(t) (FIG. **3**) and perturbation parameters ε (FIG. **4**).

FIG. **3** is a graph of initialization periods for different initial algebraic guesses in the single-step method in accordance with an embodiment of the presently disclosed technology. FIG. **3** shows the initialization period for 8 different initial algebraic guesses where ε=0.1 and t_1=1 for all cases. All of the guesses (z(−1)=0.2-1.6) converge to the consistent IC of z(0)=0.938, and can be used to accurately solve the system of DAEs. Therefore, the system of Equations 1.12, 1.13 can be solved for a relatively wide range of initial guesses (0.2-1.6) of the algebraic variable z(t), which is normally not the case for the conventional two-step method, unless a very small perturbation parameters ε is used.

FIG. **4** is a graph of a convergence for several different perturbation values ε (ε=0.1, 0.05, 0.01, 0.001) in accordance with an embodiment of the presently disclosed tech-

nology. Generally, the perturbation value ε may affect the accuracy and convergence of the initialization. For example, smaller values of ε allow the initialization to converge over shorter simulation time t. Conversely, larger values of ε may result in an initialization that is not accurate enough (at a relatively short t) to satisfy the consistency condition. As illustrated in FIG. **4**, the range of perturbation values ε that spans two orders of magnitude (i.e., 0.001 to 0.1) still results in a consistent value of z(t) of about 0.938, thus demonstrating a robustness of the inventive single-step method.

Example 2

Wu and White Problem

Example 2 includes a two equation system representing a thin film nickel hydroxide electrode during the charging process. For at least some realistic values of the variable, the determination of consistent ICs would be difficult for the conventional two-step method. The system is represented by the following equations:

$$\frac{\rho V}{W}\frac{dy(t)}{dt} = \frac{j_1}{F} \quad \text{Eq. 1.21}$$

$$j_1 + j_2 - i_{app} = 0 \quad \text{Eq. 1.22}$$

Where,

$$j_1 = i_{o,1}\left[2(1-y(t))\exp\left(\frac{(z(t)-\phi_1)F}{2RT}\right) - 2y(t)\exp\left(\frac{(z(t)-\phi_1)F}{2RT}\right)\right] \quad \text{Eq. 1.23}$$

$$j_2 = i_{o,2}\left[\exp\left(\frac{(z(t)-\phi_2)F}{RT}\right) - \exp\left(\frac{(z(t)-\phi_2)F}{2RT}\right)\right] \quad \text{Eq. 1.24}$$

The differential variable y represents the nickel hydroxide mole fraction and the algebraic variable z represents the potential difference at the solid liquid interface. The parameters of the system are given in Table 1.

TABLE 1

Parameters for Nickel Hydroxide Electrode.

Symbol	Parameter	Value	Units
F	Faraday Constant	96487	C/mol
R	Gas Constant	8.3143	J/(mol K)
T	Temperature	303.15	K
ϕ_1	Equilibrium potential	0.42	V
ϕ_2	Equilibrium potential	0.303	V
W	Mass of active material	92.7	g
V	Volume	1×10^{-5}	m^3
i_{o1}	Exchange current density	1×10^{-4}	A/cm^2
i_{o2}	Exchange current density	1×10^{-10}	A/cm^2
i_{app}	Applied current	1×10^{-5}	A/cm^2
ρ	Density	3.4	g/cm^3

In a discharged state the mole fraction of the nickel hydroxide is estimated to be:

$$y(0)=0.05 \quad \text{Eq. 1.25}$$

Under the algebraic constraint the consistent IC for the potential must be:

$$z(0)\approx 0.350236 \quad \text{Eq. 1.26}$$

Several imaginary roots are also solutions to the algebraic constraint, but these are non-physical solutions. Therefore, the imaginary roots are excluded from the set of solutions as not applicable.

Table 2 shows the range of possible ICs for the algebraic variable that provides a solution for different solvers including the proposed single-step approach. The conventional methods use the first four solvers listed in Table 2 below. With the conventional methods, the solvers require initial guesses that are very close to the consistent values, for example ranging from z(0)=0.3502359 to z(0) being within a range from −1.27 to 1.87. However, with the inventive single-step method, the possible range of ICs is widened to the range from −9.13 to 9.85.

TABLE 2

Comparison of working ranges of initial algebraic guesses

Solver	Working range of initial guess
Conventional method with Maple dsolve	z(0) = 0.3502359, Exact conditions required
Conventional method with Matlab ode15i	0.342 < z(0) < 0.365
Conventional method with Matlab ode15s	0.271 < z(0) < 0.474
Conventional method with SUNDIALS IDA	−1.27 < z(0) < 1.87
Single-step method with Maple dsolve	−9.13 < z(0) < 9.85

FIG. **5** is a graph of the single-step solution for a full charge of an electrode of a battery in accordance with an embodiment of the presently disclosed technology. Here, the initial guess of z(0)=0.7 and the perturbation parameter ε=0.002 were used. As shown in Table 2 above, such an initial guess results in a converged solution for the inventive single-step method, whereas the conventional methods fail because the initial guess is too far from the true physical value of z(0). For at least some embodiments, for example for systems where the ICs are not easily available or obvious from the physical system, the expanded range of possible initial guesses may be important for obtaining a physical solution. As shown in FIG. **5**, the values of mole fraction y and potential z reach their final values at about 3,500 seconds. Therefore, in some embodiments, the time of 3,500 seconds signifies the end of the battery charging process.

Example 3

Implicit ODE Converted to DAE, and Solved with Explicit Solver

In some embodiments, the inventive technology can be used to solve implicit ODEs. An example of such implicit ODE is shown below:

$$\left(\frac{dy(t)}{dt}\right)^2 + \left(\frac{dy(t)}{dt}\right)(y(t)+1) + y(t) = \cos\left(\frac{dy(t)}{dt}\right) \quad \text{Eq. 1.27}$$

Generally, the problem described by Equation 1.27 cannot be directly solved using the explicit solvers in Maple. When attempting to use the direct solvers, Maple states that IC for dy/dt is not known or the system cannot be converted to the explicit ODE form. However, including a substitution:

$$\frac{dy(t)}{dt} = z(t) \quad \text{Eq. 1.28}$$

converts Eq. (3.16) into:

$$z(t)^2+z(t)(y(t)+1)+y(t)=\cos(z(t)) \quad \text{Eq. 1.29}$$

In at least some embodiments, the newly added variable z makes it possible to use the inventive single-step method. For example, Equations 1.28 and 1.29 can be rewritten as:

$$\varepsilon\left(2z(t)\frac{dz(t)}{dt}+\frac{dz(t)}{dt}(y(t)+1)+z(t)\frac{dy(t)}{dt}+\frac{dy(t)}{dt}+\sin(z(t))\frac{dz(t)}{dt}\right)=z(t)^2+(t)(y(t)+1)+y(t)-\cos((t)) \quad \text{Eq. 1.30}$$

$$\frac{dy(t)}{dt}=z(t)\left(\frac{1}{2}+\frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.31}$$

where q=1000 and t_j=1 for the switch function. FIG. **6** is a graph of an initialization and a simulation for the single-step for the system of Equations 1.30, 1.31 solved using ε=0.1 with the ICs of:

$$y(0)=0,z(0)=0 \quad \text{Eq. 1.32}$$

The converged value for z(0) (at t=0) from the initialization portion of the solver is 0.55. After t=0, the simulation produces a decreasing value of z and an increasing value of y as illustrated in the graph of FIG. **6**.

Example 4

Partial Differential Equations (PDEs) Discretized to DAEs

As explained above, the PDEs can be discretized into a system of DAEs. At least some of these systems include variables with explicit time derivatives (e.g., a concentration) and static variables (e.g., a potential which may not include time derivatives, but can still change with time because other variables in the system change with time). An example of such a system is shown in the following set of PDEs:

$$\frac{\partial y}{\partial t}=\frac{\partial^2 y}{\partial x^2}-y(1+z) \quad \text{Eq. 1.33}$$

$$\frac{\partial^2 z}{\partial x^2}=(1-y^2)\exp(-z) \quad \text{Eq. 1.34}$$

The above system of Equations 1.33, 1.34 may have the following boundary conditions:

$$\frac{\partial y}{\partial x}\Big|_{x=0}=0\ y|_{x=1}=1 \quad \text{Eq. 1.35}$$

$$\frac{\partial y}{\partial x}\Big|_{x=0}=0\ z|_{x=1}=0 \quad \text{Eq. 1.36}$$

Though ∂z/∂t is not present in the system, z can change with time as y changes with time. The system of Equations 1.33, 1.34 can be solved using numerical method of lines which discretize the spatial derivatives over a series of node points between the system's boundaries. When discretizing for the spatial variable the system becomes:

$$\frac{dy_i}{dt}=\frac{1}{h^2}(y_{i+1}-2y_i+y_{i-1})-y_i(1+z_i) \quad \text{Eq. 1.37}$$

-continued

$$\frac{1}{h^2}(z_{i+1}-2z_i+z_{i-1})=(1-y_i^2)\exp(-z_i) \quad \text{Eq. 1.38}$$

where h is the length between node points. The boundary conditions 1.35, 1.36 become:

$$\frac{1}{2h}(3y_0-4y_1+y_2)=0\ y_{N+1}=1 \quad \text{Eq. 1.39}$$

$$\frac{1}{2h}(3z_0-4z_1+z_2)=0\ z_{N+1}=0 \quad \text{Eq. 1.40}$$

where N is the number of interior node points of the system. When the single-step method is used, the system of Equations 1.35, 1.36 becomes:

$$\frac{dy_i}{dt}=\left[\frac{1}{h^2}(y_{i+1}-2y_i+y_{i-1})-y_i(1+z_i)\right]\left(\frac{1}{2}+\frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.41}$$

$$\frac{-\varepsilon}{h^2}\left[\frac{dz_{i+1}}{dt}-2\frac{dz_i}{dt}+\frac{dz_{i-1}}{dt}+2y_i\frac{dy_i}{dt}\exp(-z_i)+(1-y_i^2)\frac{dz_i}{dt}\exp(-z_i)\right]=(1-y_i^2)\exp(-z_i)-\frac{1}{h^2}(z_{i+1}-2z_i+z_{i-1}) \quad \text{Eq. 1.42}$$

The boundary conditions can be rewritten as:

$$\frac{-\varepsilon}{2h}\left[3\frac{dy_0}{dt}-4\frac{dy_1}{dt}+\frac{dy_2}{dt}\right]=\frac{1}{2h}(3y_0-4y_1+y_2)-\varepsilon\frac{dy_{N+1}}{dt}=y_{N+1}-1 \quad \text{Eq. 1.43}$$

$$\frac{-\varepsilon}{2h}\left[3\frac{dy_0}{dt}-4\frac{dy_1}{dt}+\frac{dy_2}{dt}\right]=\frac{1}{2h}(3z_0-4z_1+z_2)-\varepsilon\frac{dy_{N+1}}{dt}=z_{N+1} \quad \text{Eq. 1.44}$$

The conventional two-step method using the standard solvers cannot solve Equations 1.41, 142 for a large number N using explicit solvers. Even with consistent ICs $y_i(0)$=1 and $z_i(0)$=0), N must be five or less to solve the system using Maple's dsolve. With the conventional two-step method, Maple attempts to convert the DAE system to an explicit ODE system of the form dy/dt=f. This attempt fails for larger values of N. However, when using the single-step method, the restrictions on the number of interior node points are relaxed, and the solving speed in Maple is increased without having to use solvers involving Newton type iterations. In some embodiments, larger values of N may be required for higher accuracy and better convergence.

FIG. **7** is a graph of a solution of DAEs 1.33, 1.34 using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology. FIG. **7** shows the value of y at x=0, ⅓, ⅔, and 1 for N=2 and N=11 with $\varepsilon=1\times10^{-5}$). Consistent ICs ($y_i(0)$=1 and $z_i(0)$=0) were used for FIG. **7**. The values at N=11 have converged to more accurate values, especially for values closer to x=0. The proposed approach can use the standard Maple dsolve solver to solve for more internal node points, without having to use direct DAE solvers that use Newton-

Raphson type iterations. Furthermore, even at low node points the proposed approach is faster than standard solving techniques. For example, at N=5, using the single-step method Maple dsolve produces a solution in 159 ms, which is over an order of magnitude faster than the conventional two-step technique. A comparison of computational time required for the two-step and single-step methods is shown in Table 3.

TABLE 3

Computational time needed to solve Example 4

Internal Node points, N	Two-step method using Maple dsolve	Two-step method using BESIRK	Single-step method using Maple dsolve
3	0.172	0.359	0.094
4	0.561	0.468	0.25
5	1.981	0.642	0.156

TABLE 3-continued

Computational time needed to solve Example 4

Internal Node points, N	Two-step method using Maple dsolve	Two-step method using BESIRK	Single-step method using Maple dsolve
10	N/A	1.653	0.25
20	N/A	6.334	0.577
50	N/A	56.956	3.338
100	N/A	375.572	13.479

Example 5

Finite Difference Single Particle Model

In some embodiments of physical battery systems, when discretizing systems of PDEs that contain time derivatives in all the governing equations, the boundary conditions can yield algebraic equations. The electrochemistry occurring in an intercalation based secondary battery can be described by a single particle model (SPM). In some embodiments, the SPM can be used to model battery cycling as a good model for batteries with thin electrodes and low charge and discharge rates. The SPM tracks the diffusion of lithium inside the electrode particles of Li-ion batteries governed by Fick's second law of diffusion:

$$\frac{\partial c_i}{\partial t} = \frac{1}{r^2}\frac{\partial}{\partial r}\left(r^2 D_i \frac{\partial c_i}{\partial r}\right),\ i = p, n \qquad \text{Eq. 1.45}$$

with boundary conditions:

$$\frac{\partial c}{\partial r}\Big|_{r=0} = 0 \quad \frac{\partial c_i}{\partial r}\Big|_{r=R_i} = -\frac{j_i}{D_i} \qquad \text{Eq. 1.46}$$

where

$$j_i = \frac{\pm i_{app}}{a_i 1_i F} = \pm 2k_i c_e^{0.5}(c_{i,max} - c_{i,surf})^{0.5} c_{i,surf}^{0.5} \sinh\left(\frac{F(\Phi_i - U_i)}{2RT}\right) \qquad \text{Eq. 1.47}$$

The parameters for the system described by Equations 1.45-1.47 are given in Table 4.

TABLE 4

Parameters for Single Particle Model

Symbol	Parameter	Value		Units
F	Faraday Constant	96487		C/mol
R	Gas Constant	8.3143		J/(mol K)
T	Temperature	303.15		K
c_e	Electrolyte concentration	1000		mol/m^3
i_{app}	Applied current	1		C
		Cathode (p)	Anode (n)	
D	Solid phase Diffusion Coefficient	1.0×10^{-14}	3.9×10^{-14}	m^2/s
a	particle surface area to volume	8.85×10^5	7.236×10^5	m^2/m^3
$_c$max	Maximum lithium concentration	51555	30555	mol/m^3
l	Cell thickness	80×10^{-6}	88×10^{-6}	m
R	Electrode particle radius	2×10^{-6}	2×10^{-5}	m
k_o	Reaction rate	2.334×10^{-11}	5.0307×10^{-11}	m$^{2.5}$/(mol$^{0.5}$s)
U	Overpotential	is a function of state-of-charge		

The system described by Equations 1.45-1.47 can be solved using numerical method of lines which discretize the spatial derivatives over a series of node points, N, within the particle, while the time derivative remains. This discretization creates a DAE system with 2N differential equations and four algebraic equations (the boundary conditions). The system can be solved for the concentration of lithium at every node point in the electrodes and then the electrode potentials, Φ, can be determined from the electrode surface concentrations. In some embodiments, a discharged state the initial concentration for lithium throughout the electrodes is:

$$c_p(0)=305.55 c_n(0)=49503.11 \qquad \text{Eq. 1.48}$$

with units of mol/m^3. When written in finite difference form (using a third order Euler forward approach) and applying the single-step method, the modeled system becomes:

$$\frac{dc_{i,j}}{dt} = \frac{D_i}{j^2 h^2 R_i^2}[c_{i,j+1}(j^2 + j) + c_{i,j-1}(j^2 - j) - 2j^2 c^{i,j}] \qquad \text{Eq. 1.49}$$

$$\left(\frac{1}{2} + \frac{1}{2}\tanh(1000(t-1))\right)$$

with boundary conditions converted to:

$$\frac{-\varepsilon}{2h}\left(4\frac{dc_{i,1}}{dt}-\frac{dc_{i,2}}{dt}-3\frac{dc_{i,0}}{dt}\right)=4c_{i,1}-c_{i,2}-3c_{i,0} \quad \text{Eq. 1.50}$$

$$\frac{-\varepsilon}{2h}\left(4\frac{dc_{i,N}}{dt}-\frac{dc_{i,N-1}}{dt}-3\frac{dc_{i,N+1}}{dt}\right)= \quad \text{Eq. 1.51}$$

$$4c_{i,N}-c_{i,N-1}-3c_{i,N+1}-\frac{j_i}{D_i}$$

Results for the concentration values (using five internal node points N) at individual and boundary points are shown in FIG. **8**. The inset shows the difference in concentration values at short times, and the ability of the proposed approach to converge to the initial conditions for all concentrations. With the conventional two-step model using the Rosenbrock stiff solver in MAPLE, the system can be solved for a complete IC rate charge with up to 58 internal node points before the solver fails due to memory constraints. When using the single-step method, the same system under the same memory constraints can be solved for over 2500 internal node points. The ICs for both cases are shown in Equation 1.48. The switch function was applied with t_j=1 and q=1000, and the perturbation value was $\varepsilon=1\times10^{-5}$. The system was solved with a Rosenbrock solver under both standard FD scheme using the single-step method.

Table 5 shows the solving speed for simulating the lithium concentration throughout the electrode particles for a range of node points.

TABLE 5

Computational time		
Internal node points, N	Standard FD Comp time (ms)	Proposed single step Comp time (ms)
5	111	55
25	3340	94
50	23715	200
100	N/A	404
500	N/A	4377

For example, for a SPM with 50 internal node points, resulting in a system of 4 AEs and 100 ODEs, the single-step method reduced computational time by two orders of magnitude (from 23,715 ms to 200 ms). In some embodiments, the single-step method reduces the computational burden on the solver, therefore enabling the solver to solve larger systems.

Battery Charging System

FIG. **9** is a partially schematic view of a battery charging system **1010** in accordance with an embodiment of the presently disclosed technology. In some embodiments, the battery charging system **1010** may include a power supply **110** and a DC supply **120** that provides power to an electronics board **140**. The electronics board **140** may include several components including a programmable chip **141** (e.g., an EPROM). A battery charging housing **150** may include one or more rechargeable batteries **160***a*, **160***b*. In some embodiments, the battery charging housing may be replaced by connectors that are electrically connected to the electronics board **140** with conductive wires.

The Operation of the DC supply **120** and/or the electronics board **140** may be controlled by a controller **130**. For example, the controller **130** may load data onto the programmable chip **141** that, in turn, controls the DC supply **120**. The data loaded by the controller **130** may be obtained from the single-step method for modeling the ADE; DAEs that describe, for example, charging/discharging, heating, cycling, etc., for the rechargeable batteries. For example, data (e.g., parameters)obtained by the Examples 1-5 above may be used to control charging/discharging current, charging/discharging voltage, temperature of the battery, peak efficiency of the battery, optimal number of charging/discharging cycles, etc., of the batteries **160***a*, **160***b* through the controller **130** and/or programmable chip **141**. In some embodiments, the controller **130** may control the DC supply **120** directly. In some embodiments, the controller **130** may be part of (e.g., may be carried by) the electronics board **140**.

FIG. **10** is a block diagram of a controller **1020** (e.g., a computing device) for the battery charging system in accordance with an embodiment of the presently disclosed technology. The controller **1020** includes one or more input devices **220** that provide input to a CPU (processor) **210**. Input devices **220** can include, for example, a mouse, a keyboard, a touchscreen, an infrared sensor, a touchpad, wearable input devices, a camera or image-based input device, microphone, or other input devices. The CPU **210** may be a single processing unit or multiple processing units in a device or distributed across multiple devices. The CPU **210** may be coupled to other hardware devices, for example, with the use of a BUS, such as a PCI BUS or SCSI BUS. Further, the CPU **210** may communicate with a hardware controller for devices such as for a display **230**. The display **230**, for example, may be used to display text and graphics. One example of a suitable display **230** is a touchscreen that provides graphical and textual visual feedback to a user. In some embodiments, the display **230** includes the input devices **220** as part of the display, such as when the input device is a touchscreen. In some embodiments, the display **230** is separate from the input device **220**. Examples of standalone display devices include, for example, an LCD display screen, an LED display screen, a projected display (such as a heads-up display device), and so on. Other I/O devices **240** may also be coupled to the CPU **210**, such as a video or audio card, USB or other external devices, printer, speakers, CD-ROM drive, DVD drive, disk drives, Blu-Ray devices, battery connection cables, or battery measurement tools. In some implementations, other I/O devices **240** also include a communication device capable of communicating wirelessly or wire-based with a network node. The communication device may communicate with another device or a server through a network using, for example, TCP/IP protocols.

The CPU **210** can access a memory **250**. The memory **250** can include one or more hardware devices for volatile and non-volatile storage, and may include both read-only and writable memory. For example, the memory **250** may comprise random access memory (RAM), read-only memory (ROM), writable non-volatile memory, such as flash memory, hard drives, floppy disks, CDs, DVDs, magnetic storage devices, tape drives, device buffers, and so forth. The memory **250** can include non-transitory electrical signals on the underlying hardware. The memory **250** can include program memory **260** that contains programs and software, such as an operating system **261**, geotemporal mapper **262**, and other application programs **263**. The memory **250** also includes data memory **270** that includes any configuration data, settings, user options and preferences that may be needed by the program memory **260**. System **1020** may include general purpose or special purpose computing system environments or configurations.

Many embodiments of the technology described below may take the form of computer- or controller-executable instructions, including routines executed by a programmable

computer or controller. Those skilled in the relevant art will appreciate that the technology can be practiced on computer/controller systems other than those shown and described below. The technology can be embodied in a special-purpose computer, controller or data processor that is specifically programmed, configured or constructed to perform one or more of the computer-executable instructions described below. Accordingly, the terms "computer" and "controller" as generally used herein refer to any data processor and can include Internet appliances and hand-held devices (including palm-top computers, wearable computers, cellular or mobile phones, multi-processor systems, processor-based or programmable consumer electronics, network computers, mini computers and the like). Information handled by these computers can be presented at any suitable display medium, including a CRT display or LCD.

The technology can also be practiced in distributed environments, where tasks or modules are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules or subroutines may be located in local and remote memory storage devices. Aspects of the technology described below may be stored or distributed on computer-readable media, including magnetic or optically readable or removable computer disks, as well as distributed electronically over networks. Data structures and transmissions of data particular to aspects of the technology are also encompassed within the scope of the embodiments of the technology.

From the foregoing, it will be appreciated that specific embodiments of the technology have been described herein for purposes of illustration, but that various modifications may be made without deviating from the disclosure. For example, in some embodiments, the EPROM chip may be a part of the controller. Moreover, while various advantages and features associated with certain embodiments have been described above in the context of those embodiments, other embodiments may also exhibit such advantages and/or features, and not all embodiments need necessarily exhibit such advantages and/or features to fall within the scope of the technology. Accordingly, the disclosure can encompass other embodiments not expressly shown or described herein.

The invention claimed is:

1. A method for charging a rechargeable battery comprising:

generating, by a computing device, a model of the rechargeable battery;

determining one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

holding differential variables of the model static by a switch function while determining the one or more initial conditions for one or more algebraic variables;

applying the initial conditions to differential equations of the model by the switch function;

determining one or more parameters for the rechargeable battery by solving algebraic and differential equations of the model with the solver; and

by a programmable chip, adjusting a state of the battery based on the one or more parameters by electrically connecting a DC power supply to the rechargeable battery,

wherein the switch function is a tan h function.

2. The method of claim **1**, wherein adjusting the state of the battery includes at least one of adjusting a charging/discharging current, a charging/discharging voltage, a temperature of the battery, a peak efficiency of the battery, or an optimal number of charging/discharging cycles.

3. The method of claim **1**, wherein the model comprises a set of differential algebraic equations (DAEs).

4. The method of claim **3**, further comprising separating the DAEs into at least one algebraic equation (AE) and at least one differential equation (DE).

5. The method of claim **3**, wherein the one or more parameters for the rechargeable battery comprise a solution of the set of the DAEs.

6. The method of claim **1**, wherein the initial conditions are determined by perturbations.

7. The method of claim **1**, wherein the solver is a Rosenbrock type solver.

8. The method of claim **1**, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

9. A system for charging a rechargeable battery comprising:

a computing device in electrical communication with a programmable chip on an electronics board, the computing device configured to:

generate a model of the rechargeable battery;

determine one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

hold differential variables of the model static by a switch function while the one or more initial conditions are being determined for one or more algebraic variables; and

apply the initial conditions to differential equations of the model by the switch function, and determine one or more parameters for the rechargeable battery by solving the algebraic and differential equations of the model with the solver; and

the programmable chip of the electronics board configured to electrically connect a DC power supply to the rechargeable battery,

wherein the electronics board is configured to adjust charging or discharging of the battery based on the one or more parameters received from the computing device,

wherein the switch function is a tan h function.

10. The system of claim **9**, further comprising one or more rechargeable batteries.

11. The system of claim **10** wherein the one or more rechargeable batteries are lithium-ion batteries.

12. The system of claim **9**, wherein the programmable chip is an EPROM carried by the electronics board, wherein the EPROM is:

configured to receive the one or more parameters received from the computing device, and

configured to adjust a charging voltage to the rechargeable battery based on the one or more parameters received from the computing device.

13. The system of claim **9**, further comprising a housing for rechargeable batteries.

14. The system of claim **9**, wherein the computing device is a controller.

15. The system of claim **14**, wherein the controller is carried by the electronics board.

16. The system of claim 9, wherein the model comprises a set of differential algebraic equations (DAEs).

17. The system of claim 16, wherein the one or more parameters for the rechargeable battery comprise a solution of the set of the DAEs.

18. The system of claim 9, wherein the initial conditions are determined by perturbations.

19. The system of claim 9, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

20. A computer-readable storage device storing computer-executable instructions, the instructions causing charging a rechargeable battery by:

generating, by a computing device, a model of the rechargeable battery;

determining one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

holding differential variables of the model static by a switch function while determining the one or more initial conditions for one or more algebraic variables;

applying the initial conditions to differential equations of the model by the switch function;

determining one or more parameters for the rechargeable battery by solving algebraic and differential equations of the model with the solver; and

adjusting a state of the battery based on the one or more parameters,

wherein the switch function is a tan h function.

21. The computer-readable storage device of claim 20, further comprising instructions for separating a set of differential algebraic equations (DAEs) into at least one algebraic equation (AE) and at least one differential equation (DE).

22. The computer-readable storage device of claim 20, wherein the one or more parameters of the rechargeable battery comprise a solution of the set of the DAEs.

23. The computer-readable storage device of claim 20, wherein the initial conditions are determined by perturbations.

24. The computer-readable storage device of claim 20, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

* * * * *

US010769236B2

(12) **United States Patent**
Sonawane et al.

(10) **Patent No.: US 10,769,236 B2**
(45) **Date of Patent: Sep. 8, 2020**

(54) **BATTERY MODELS, SYSTEMS, AND METHODS USING ROBUST FAIL-SAFE ITERATION FREE APPROACH FOR SOLVING DIFFERENTIAL ALGEBRAIC EQUATIONS**

(71) Applicants: **University of Washington**, Seattle, WA (US); **Washington University**, St. Louis, MO (US)

(72) Inventors: **Dayaram Sonawane**, Seattle, WA (US); **Manan Pathak**, Seattle, WA (US); **Venkat Subramanian**, Seattle, WA (US); **Matthew Lawder**, St. Louis, MO (US)

(73) Assignees: **University of Washington**, Seattle, WA (US); **Washington University**, St. Louis, MO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 309 days.

(21) Appl. No.: **15/745,984**

(22) PCT Filed: **Jul. 20, 2016**

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§ 371 (c)(1),
(2) Date: **Jan. 18, 2018**

(87) PCT Pub. No.: **WO2017/015396**
PCT Pub. Date: **Jan. 26, 2017**

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Related U.S. Application Data

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H02J 7/00 (2006.01)
G06F 17/13 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G06F 17/13*** (2013.01); ***G06F 30/20*** (2020.01); ***H01M 10/44*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC H02J 7/0021; H02J 7/0048
(Continued)

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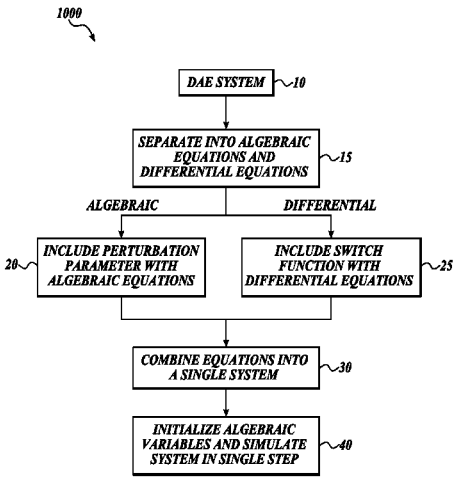
Primary Examiner — Jerry D Robbins
(74) *Attorney, Agent, or Firm* — Christensen O'Connor Johnson Kindness PLLC

(57) **ABSTRACT**

Battery models using robust fail-safe iteration free approach for solving Differential Algebraic Equations, and associated systems and methods are disclosed. In one embodiment, a
(Continued)



method includes generating a model of the rechargeable battery; determining one or more initial conditions for one or more algebraic variables of the model using a solver; holding differential variables of the model static by a switch function while determining the one or more initial conditions; applying the initial conditions to the model by the switch function; and determining one or more parameters for the rechargeable battery by solving the algebraic and differential equations.

24 Claims, 10 Drawing Sheets

(51) **Int. Cl.**

H01M 10/44	(2006.01)
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G06F 111/10	(2020.01)

(52) **U.S. Cl.**

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(58) **Field of Classification Search**

USPC 320/137

See application file for complete search history.

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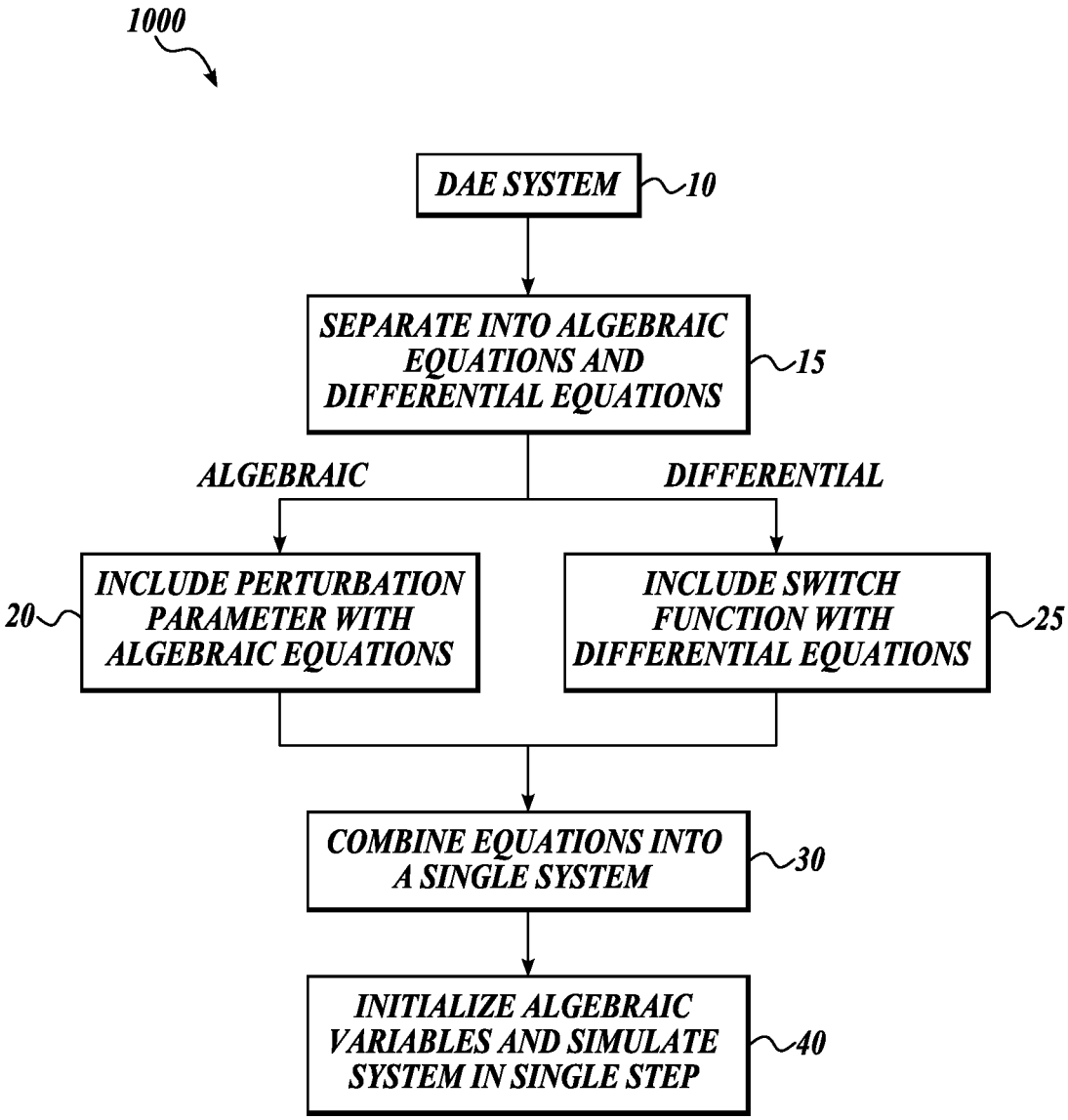
1000
DAE SYSTEM
10
SEPARATE INTO ALGEBRAIC EQUATIONS AND DIFFERENTIAL EQUATIONS
15
ALGEBRAIC
DIFFERENTIAL
20
INCLUDE PERTURBATION PARAMETER WITH ALGEBRAIC EQUATIONS
INCLUDE SWITCH FUNCTION WITH DIFFERENTIAL EQUATIONS
25
COMBINE EQUATIONS INTO A SINGLE SYSTEM
30
INITIALIZE ALGEBRAIC VARIABLES AND SIMULATE SYSTEM IN SINGLE STEP
40

Fig. 1.

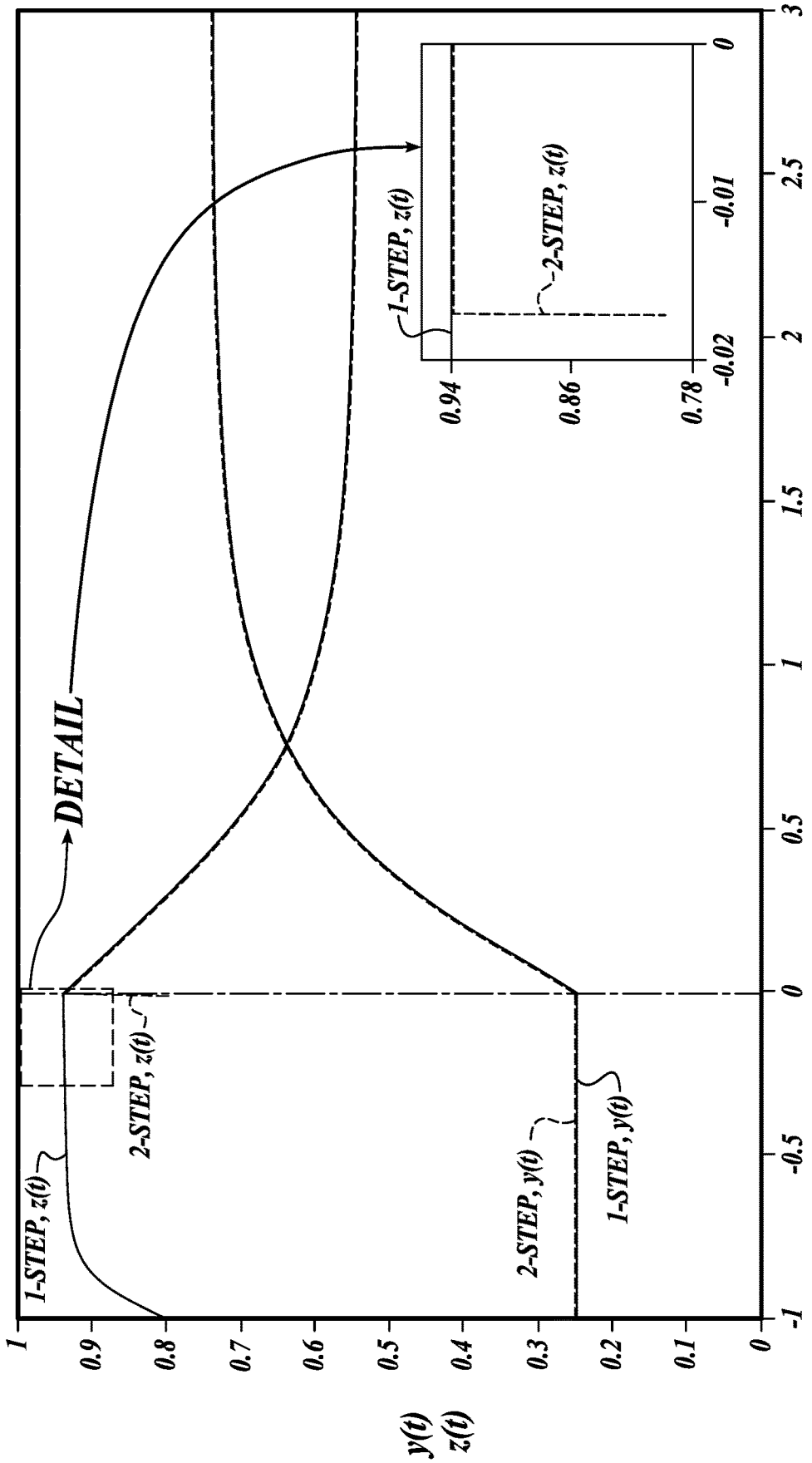
DETAIL
1-STEP, z(t)
2-STEP, z(t)
2-STEP, y(t)
1-STEP, y(t)
y(t)
z(t)
t, time (s)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-1
-0.5
0
0.5
1
1.5
2
2.5
3
0.94
0.86
0.78
-0.02
-0.01
0

Fig.2.

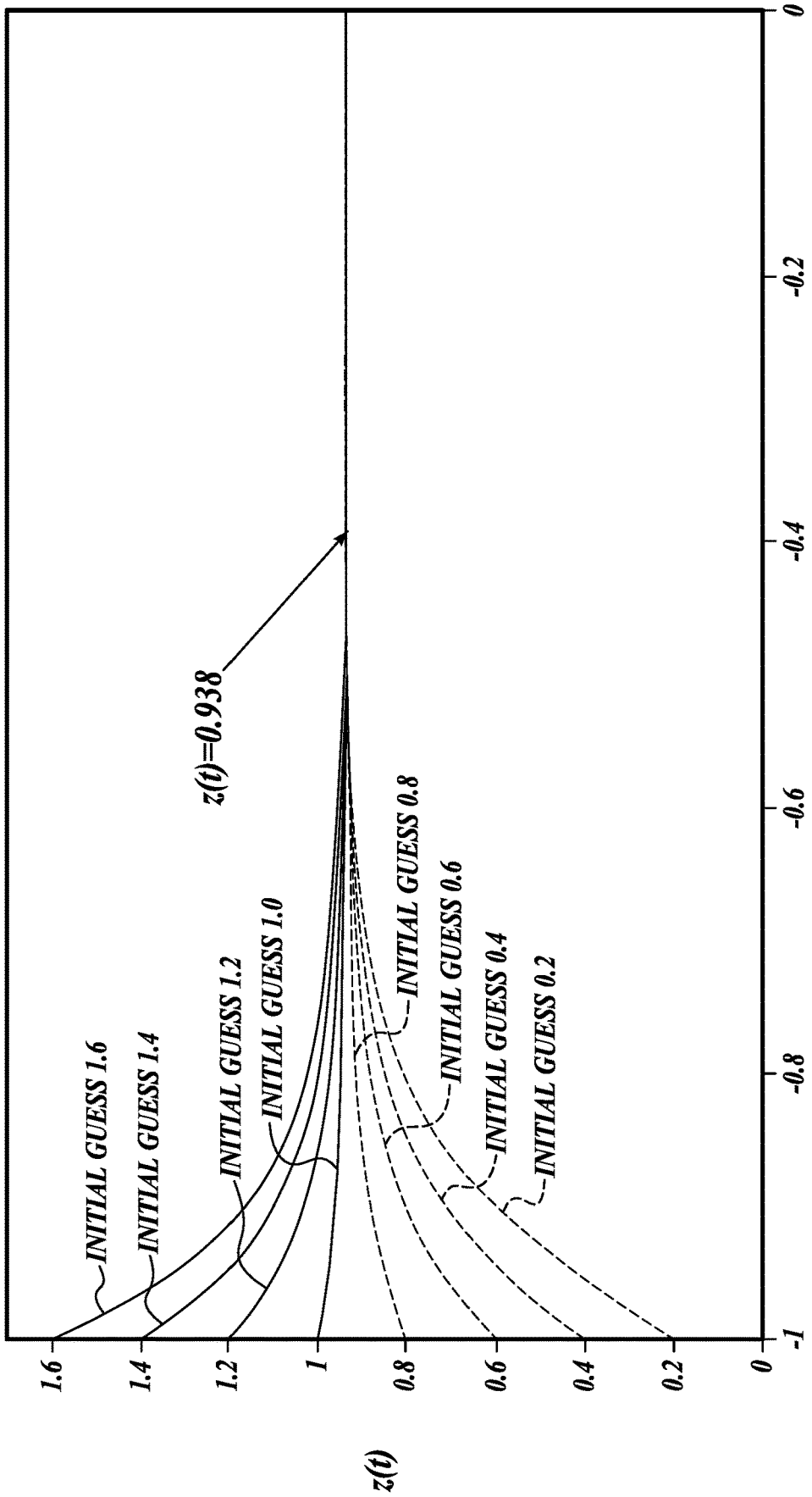
z(t)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-1
-0.8
-0.6
-0.4
-0.2
0
t, time (s)
z(t)=0.938
INITIAL GUESS 1.6
INITIAL GUESS 1.4
INITIAL GUESS 1.2
INITIAL GUESS 1.0
INITIAL GUESS 0.8
INITIAL GUESS 0.6
INITIAL GUESS 0.4
INITIAL GUESS 0.2

Fig. 3.

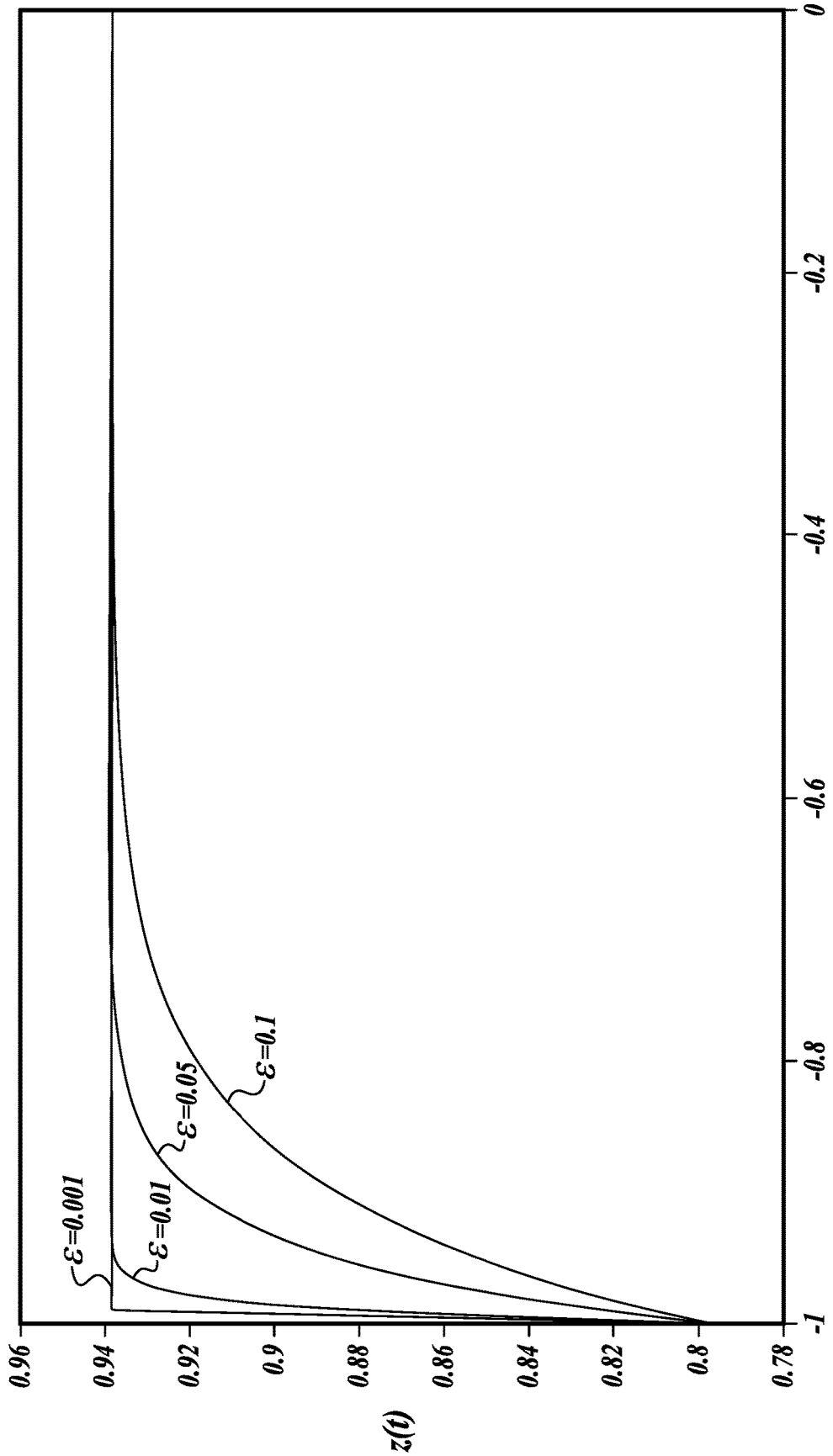
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
0.8
0.78
z(t)
0
-0.2
-0.4
-0.6
-0.8
-1
t, time (s)
ε=0.001
ε=0.01
ε=0.05
ε=0.1

Fig. 4.

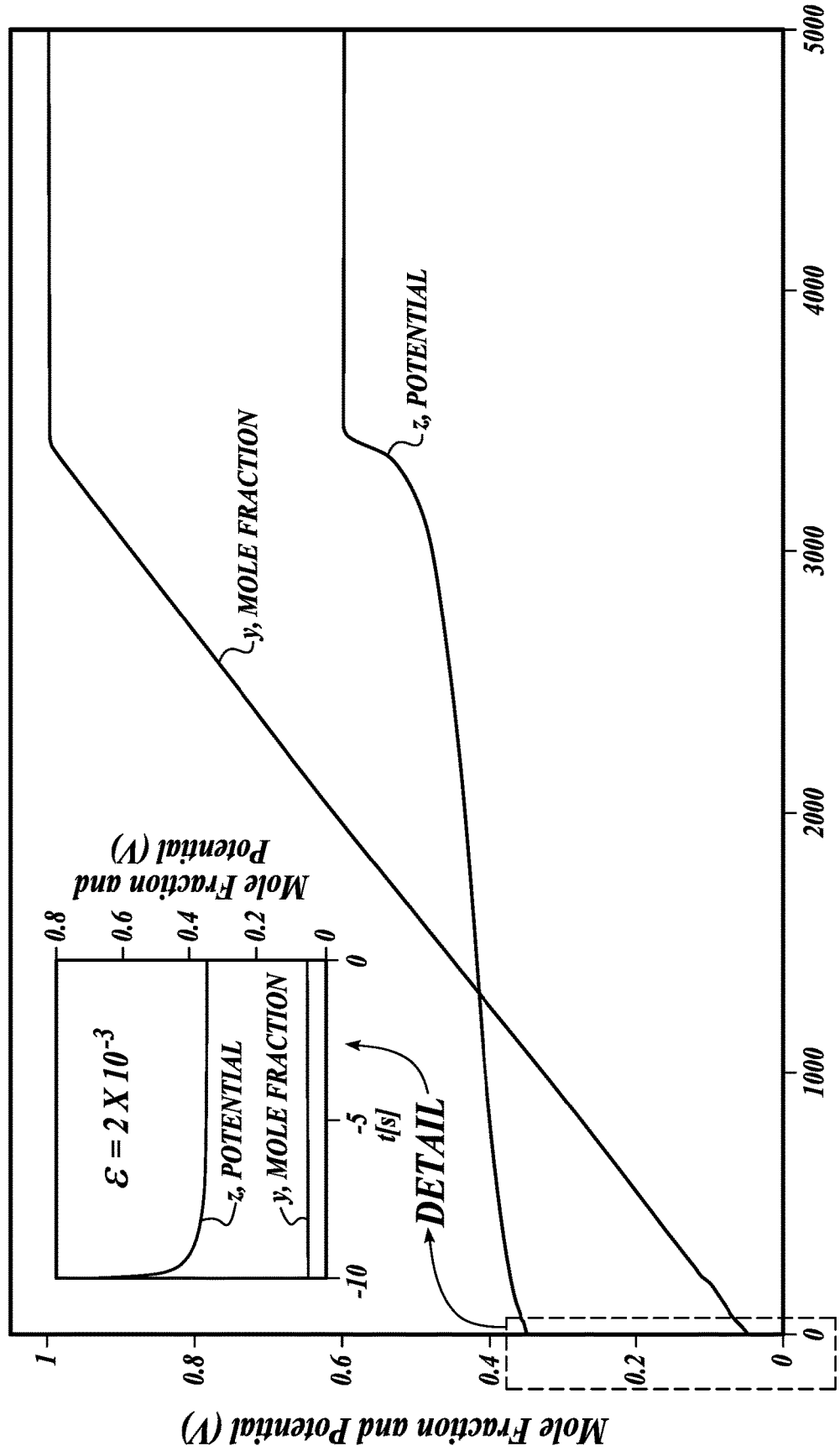
Mole Fraction and Potential (V)
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
t, time (s)
y, MOLE FRACTION
z, POTENTIAL
DETAIL
ε = 2 X 10^-3
z, POTENTIAL
y, MOLE FRACTION
-10
-5
t[s]
0
0.2
0.4
0.6
0.8
Mole Fraction and Potential (V)

Fig. 5.

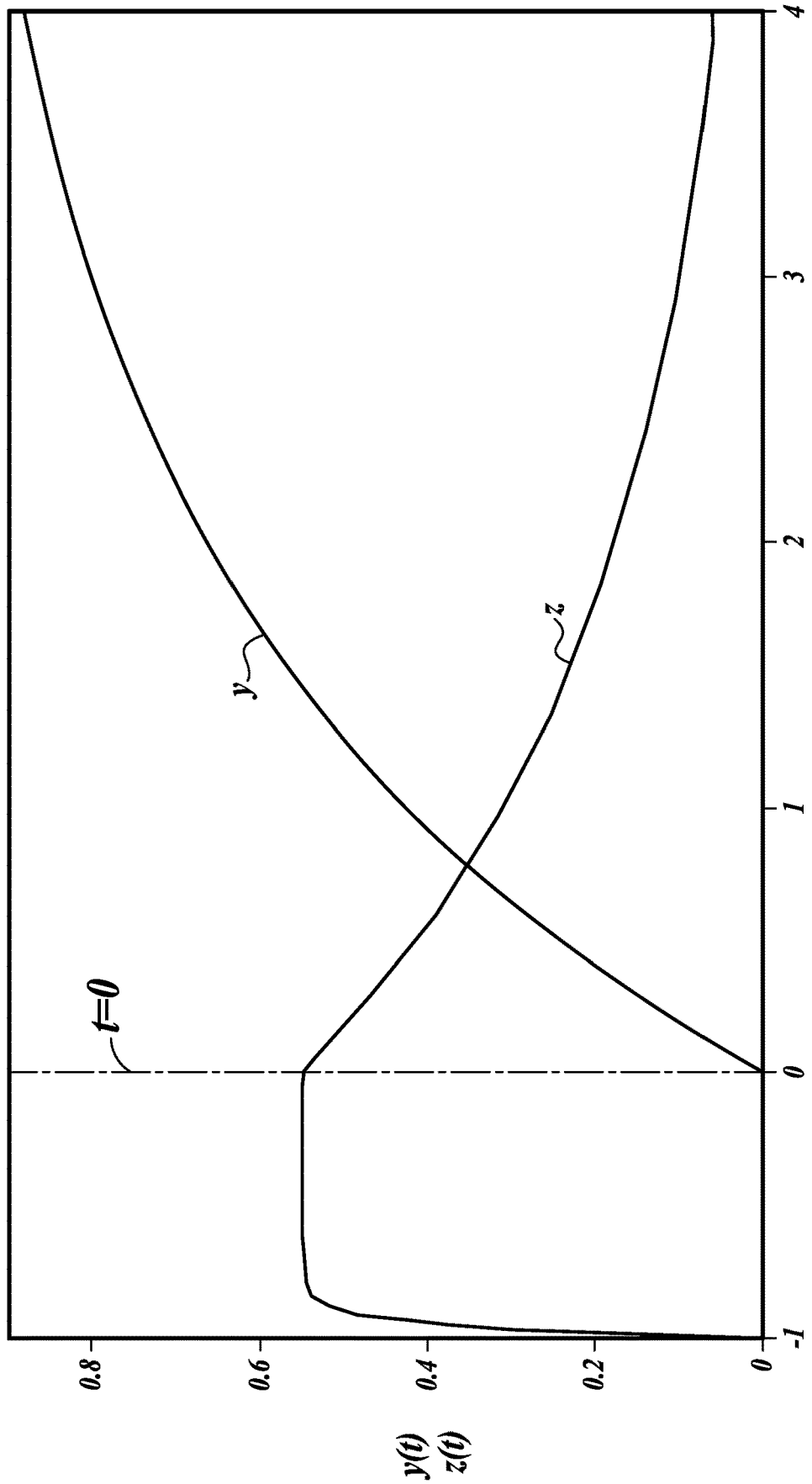

Fig. 6.

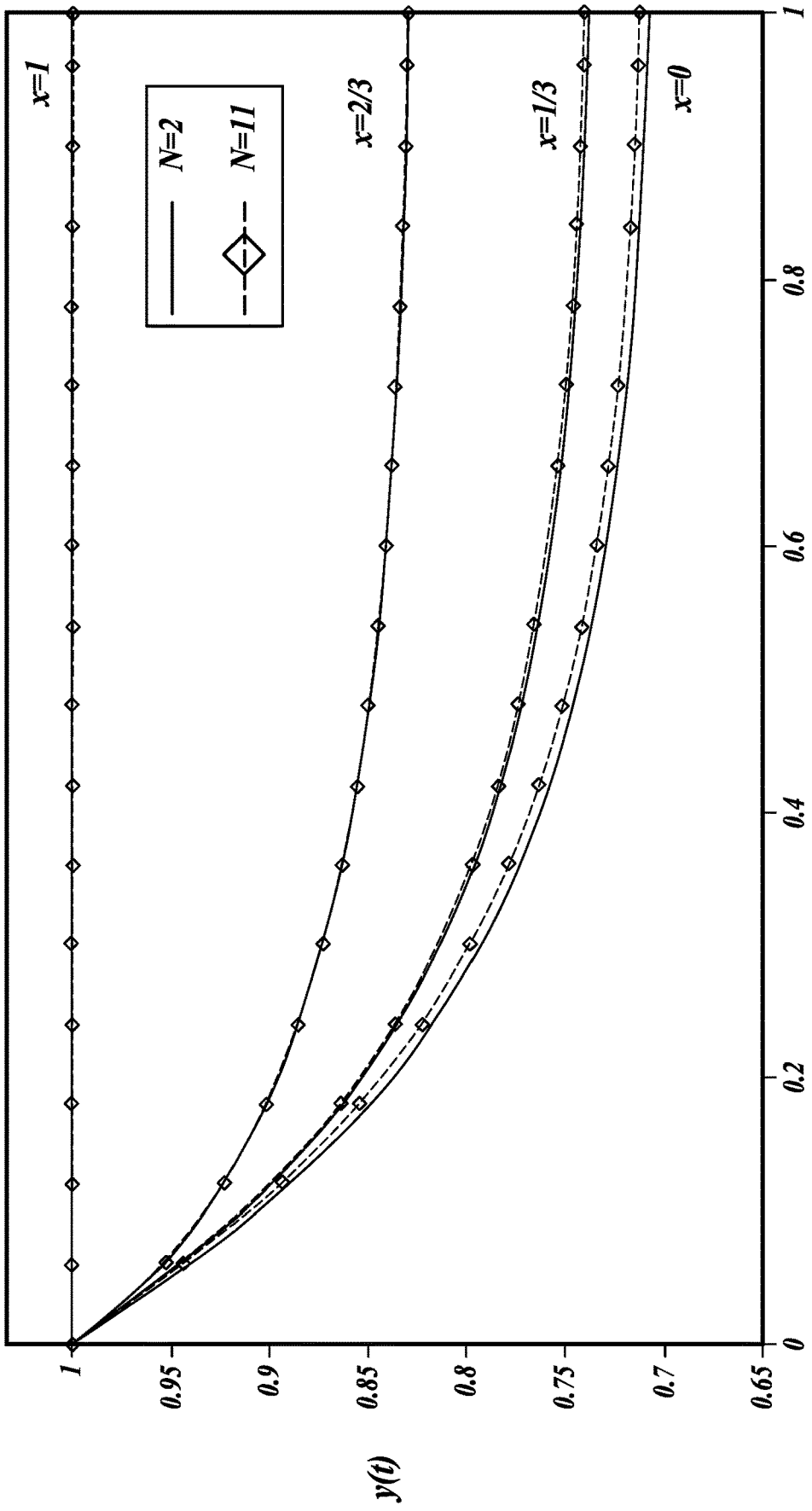
x=1
x=2/3
x=1/3
x=0
N=2
N=11
y(t)
t, time (s)
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0
0.2
0.4
0.6
0.8
1

Fig. 7.

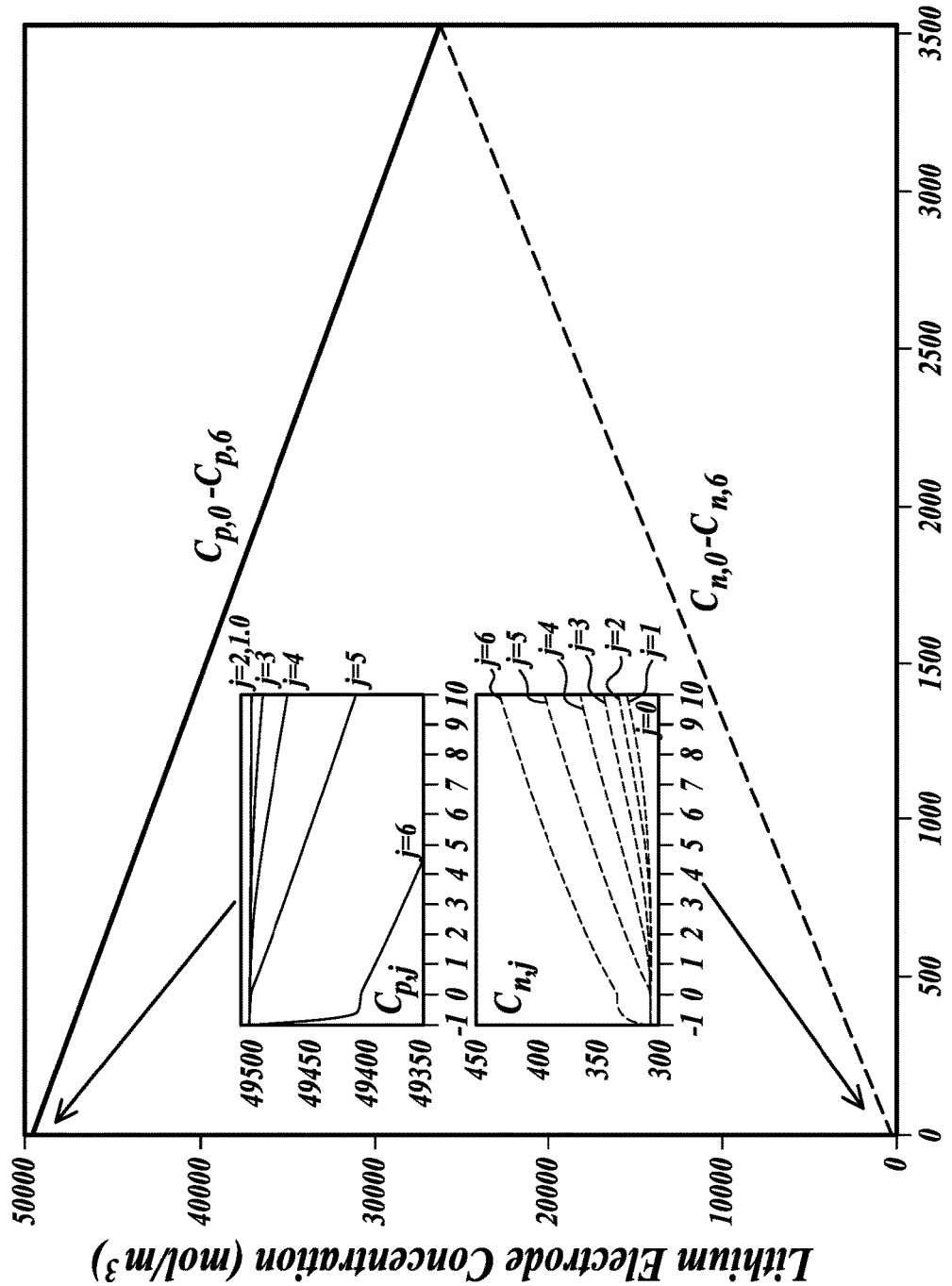
Lithium Electrode Concentration (mol/m3)
t, time (s)
$C_{p,0}$-$C_{p,6}$
$C_{n,0}$-$C_{n,6}$
C_{pj}
C_{nj}
j=0
j=1
j=2
j=3
j=4
j=5
j=6
j=2,1.0

Fig. 8.

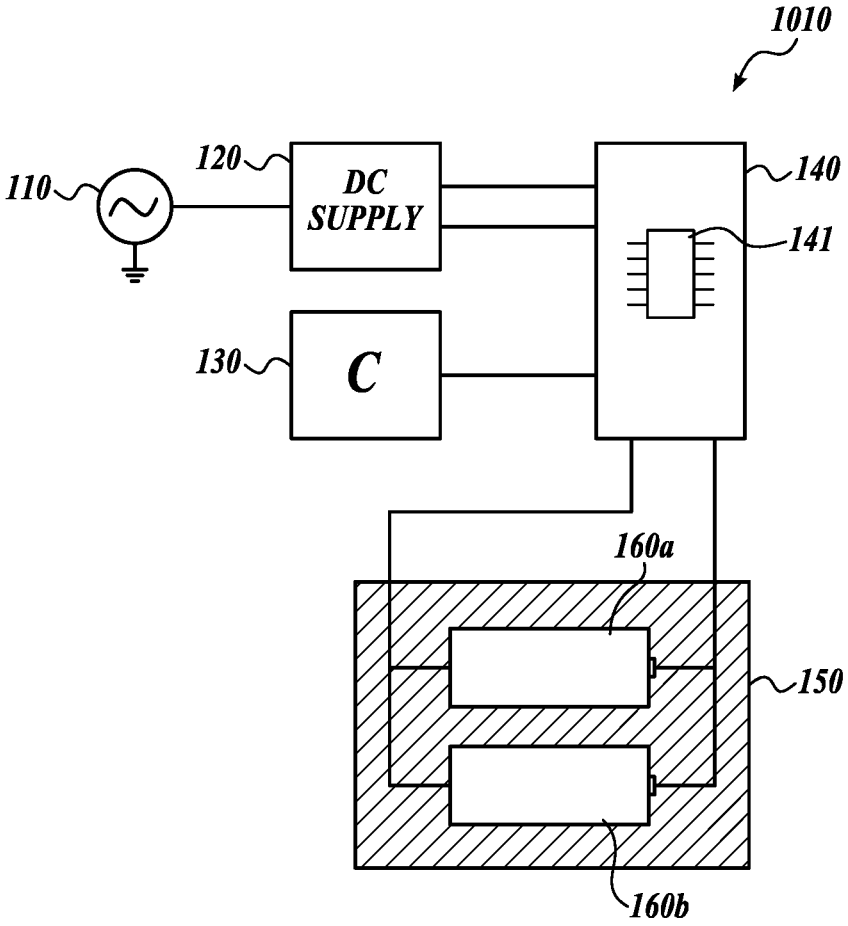

Fig.9.

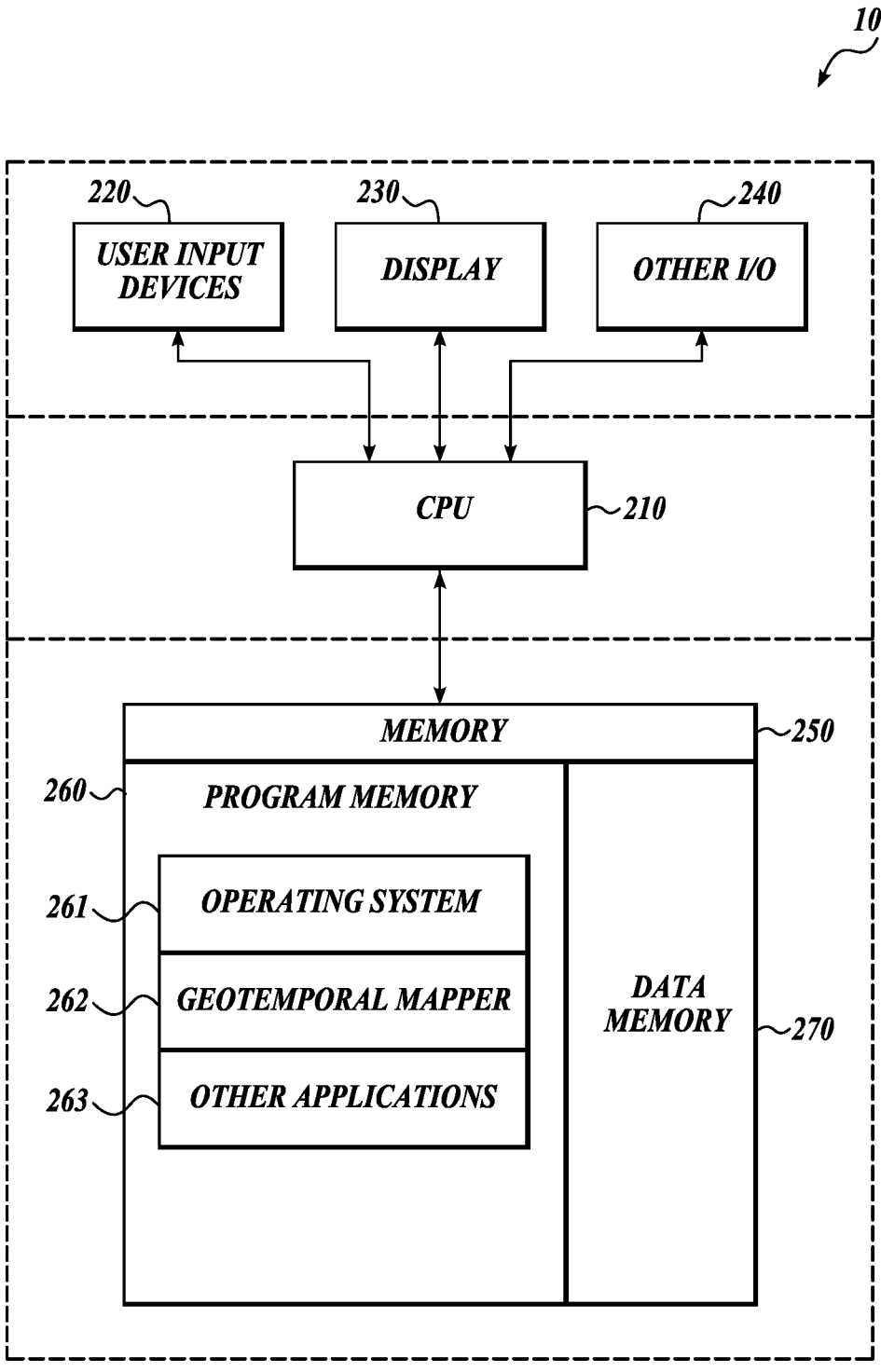
1020
220
USER INPUT DEVICES
230
DISPLAY
240
OTHER I/O
CPU
210
MEMORY
250
260
PROGRAM MEMORY
261
OPERATING SYSTEM
262
GEOTEMPORAL MAPPER
263
OTHER APPLICATIONS
DATA MEMORY
270

Fig. 10.

BATTERY MODELS, SYSTEMS, AND METHODS USING ROBUST FAIL-SAFE ITERATION FREE APPROACH FOR SOLVING DIFFERENTIAL ALGEBRAIC EQUATIONS

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 62/194,678, filed Jul. 20, 2015, the disclosure of which is hereby incorporated by reference in its entirety.

STATEMENT OF GOVERNMENT LICENSE RIGHTS

This invention was made with Government support under the Advanced Research Projects Agency—Energy (ARPA-E) award No. DE-AR0000275 awarded by the United States Department of Energy (DOE). The Government has certain rights in the invention.

FIELD OF THE INVENTION

The present invention relates generally to chargeable batteries, and more particularly relates to methods and apparatuses for improving efficiency, energy density, temperature, and/or life cycle associated with charging/discharging of the batteries.

BACKGROUND

Rechargeable batteries have become an essential part of modern electronics, for example, in smart phones, computers, cameras, cars, unmanned aerial vehicles, and other devices. For instance, lithium-ion (Li-ion) batteries are a popular choice as an energy storage medium due to their relatively large energy density. However, operating a Li-ion battery too aggressively can lead to a reduced cycle life and unpredictable thermal runaway reactions. Furthermore, charging of the Li-ion batteries may take too long time or be too inefficient for a specific purpose. These challenges reduce the usefulness of the Li-ion batteries.

In some instances, predictive physical models can be used to optimize the behavior of the rechargeable batteries. For example, based on the predictive physical models, battery charging/discharging can be selected such that, for example, the charging time is shorter, the temperature of the battery is lower, or the life of the battery is longer. With predictive physical models, often the representative system of equations includes a combination of ordinary differential equations (ODEs), partial differential equations (PDEs), and algebraic equations (AEs). The PDEs are often the governing equations of the system (e.g., a battery charging system) that vary in both space and time. When discretizing these PDEs spatially, the PDEs are reduced to a set of ODEs and AEs. This resulting combined set of ODEs and AEs is known as a set of differential algebraic equations (DAEs). In typical physical systems, the ODEs will often represent most of the governing equations, while the AEs act as constraints applied to the system to ensure that the solution accurately reflects the physical possibilities (e.g., conservation laws, boundary conditions, etc.).

For a system of DAEs, a set of consistent initial conditions (ICs) must be provided in order to solve the system with standard solvers. In some cases, even small deviations from consistent ICs will cause the DAE solver to fail. Therefore, some solvers have initialization routines that calculate consistent ICs from starting guesses. However, these routines add computational time and often require specific solvers to obtain the ICs used by the primary DAE solver.

Some conventional IC estimates use non-physical approximations such as setting differential variable gradients to zero initially. Since the true value of the ICs may be significantly different from the starting guess, this approach may create solver inefficiencies for the few cases that these solvers are able to solve. Furthermore, if the true value of the ICs is sufficiently different from the zero-gradient value, the DAE solver may fail.

Some conventional technologies calculate the ICs of differential and algebraic variables separately using an Euler backward step with a very small step size in order to obtain values very near the initial time. However, these conventional technologies also create solver inefficiencies due to the very small step size used to calculate the ICs, which requires a significant computational effort for calculating the ICs.

Other conventional technologies use successive linear programming, a Taylor series approximation, or a Laplace method to find ICs. However, these methods may also require a significant computational effort, or may produce ICs that are not sufficiently accurate for the DAE solver. Therefore, a need remains for battery charging/discharging technologies that are based on efficient predictive models.

DESCRIPTION OF THE DRAWINGS

The foregoing aspects and the attendant advantages of this invention will become more readily appreciated with reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:

FIG. **1** is a flow chart of a single-step modeling method in accordance with an embodiment of the presently disclosed technology.

FIG. **2** is a graph of comparison between the conventional two-step method and inventive single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **3** is a graph of initialization periods for different initial algebraic guesses in the single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **4** is a graph of a convergence for several different perturbation values in accordance with an embodiment of the presently disclosed technology.

FIG. **5** is a graph of the single-step solution for a full charge of an electrode in accordance with an embodiment of the presently disclosed technology.

FIG. **6** is a graph of an initialization and a simulation for the single-step method in accordance with an embodiment of the presently disclosed technology.

FIG. **7** is a graph of a solution of ADE; DAEs using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology.

FIG. **8** is a graph of a solution of a single particle model using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology.

FIG. **9** is a partially schematic view of a battery charging system in accordance with an embodiment of the presently disclosed technology.

FIG. **10** is a block diagram of a controller for the battery charging system in accordance with an embodiment of the presently disclosed technology.

DETAILED DESCRIPTION

Specific details of several embodiments of battery charging and discharging are described. The inventive battery charging/discharging is based on numerical solutions of the physical equations that govern the battery charging/discharging. In some embodiments, the inventive technology uses a single-step method that includes an iteration-free system initialization to obtain consistent initial conditions (ICs), followed by solving a governing set of differential algebraic equations (DAEs) using explicit solvers. In at least some embodiments, the exact knowledge of the ICs is not needed for solving the DAEs. Since the iterations are not needed, the initialization (e.g., setting the ICs) and the DAE simulation may be performed by a single solver using a suitable switch function. Furthermore, with the single-step method, the DAE equations may be solved using an explicit (i.e., non-iterative) solver. The ICs used in the single-step method would often be too inaccurate for the conventional two-step technologies.

In some embodiments, a perturbation initialization is used to estimate the ICs for the algebraic variables, followed by solving the DAEs based on the consistent ICs obtained at the first step. In some embodiments, solving the differential (D) and algebraic (A) equations of the DAEs is combined into one solver by using a switch function (e.g., a hyperbolic tangent function). Such a switch function constrains the differential variables while the perturbation method searches for consistent ICs for the algebraic variables. The continuous nature of switch function allows for correction of inconsistent converged ICs that occurs under large perturbation values. This extension of allowable consistent converged ICs helps to expand the robustness of the single-step method. In some embodiments, using a single-step approach increases the robustness of the solution method by allowing for a larger perturbation values to relatively rapidly calculate the ICs, while enabling explicit ODE solvers to solve nonlinear DAEs directly (i.e., without iterations typically required to solve the implicit systems of equations). In at least some embodiments, the proposed approach does not require the nonlinear solvers for the initialization subroutines that find consistent ICs. Based on the solution of the governing DAE equations, different parameters for rechargeable batteries can be determined (e.g., charging/discharging current, charging/discharging voltage, temperature of the battery, peak efficiency of the battery, optimal number of charging/discharging cycles, etc.).

General DAE System

A general DAE system is shown in Equations 1.1 and 1.2 in a semi-explicit form.

$$\frac{dy}{dt} = f(t, y, z) \quad \text{Eq. 1.1}$$

$$0 = g(t, y, z) \quad \text{Eq. 1.2}$$

where y are the differential variables, z are the algebraic variables, and t is the time. Furthermore, function g is differentiable and dg/dt is non-singular. The system of DAEs shown above often arises from combining equations governing physical phenomena with constraints, or by discretizing a PDE's spatial variables while keeping time continuous (e.g., as shown in Examples 4 and 5 below).

In order to solve the system of DAEs shown in Equations 1.1 and 1.2, ICs for all variables are given as:

$$t=0\ y(0)=y_0\ z(0)=z_0 \quad \text{Eq. 1.3}$$

However, the exact values for consistent z_0 are not always readily available. For conventional DAE solvers (without initialization routines), ICs must be consistent with the system of DAEs or a solution is not obtainable, because without the consistent ICs the solver fails. Variables present in the AEs (e.g., Equation 1.2) are limited to those sets that directly satisfy the algebraic limits. A system that includes ODEs only will often offer a wider range of consistent ICs, because the equations are the derivatives (e.g., they change over time) of the system variables rather than the variable values. However, combining AEs to an ODE system increases the stiffness of the system and often necessitates a priori knowledge of the exact ICs of the system.

Perturbation Method for Solving AEs

In some embodiments of the inventive technology, in order to loosen the restriction of consistency on the algebraic variables (i.e., in order to make the system of DAEs less stiff), a perturbation approach with a perturbation parameter ε is used such that:

$$g(t) = \lim_{\varepsilon \to 0} g(t+\varepsilon) = 0 \quad \text{Eq. 1.4}$$

$$g(t+\varepsilon) = 0 \quad \text{Eq. 1.5}$$

$$-\varepsilon \frac{dg(t)}{dt} = g(t) + O(\varepsilon^2) \quad \text{Eq. 1.6}$$

Once in perturbation form shown in Equations 1.4-1.6, the AEs can be solved first (without any ODEs, but using the given ICs for the differential variables) to find consistent initial values for all algebraic variables. The algebraic variable values found from the above perturbation approach will be consistent with the given differential variable ICs and the values can be used with the initial system of DAEs as ICs as discussed below.

Solving the DAEs Using the ICs Obtained from the AEs

When solving the system of DAEs, the set is solved in its initial form (in the example of Equations 1.1 and 1.2, a semi-explicit form), and the consistent ICs from initialization (i.e., from the Eqs. 1.4-1.6) are provided. Using this approach provides an initialization routine that produces consistent ICs to be fed into the solver along with the original system. The initialization routine allows for a wider range of initial guesses to be used for the algebraic variables of the system. Even though the above perturbation method is generally robust, the perturbation values must be small enough for the converged value of the algebraic variables to be consistent. Otherwise, if the perturbation values ε are too large, the AEs may not converge to consistent ICs.

Therefore, the above procedure includes a combination of: (1) initialization using a solver for obtaining the consistent ICs of the algebraic variables, and (2) solving the DAE system using the consistent ICs obtained from (1). Instead of solving tasks (1) and (2) separately using dedicated solvers for each of the tasks, with some embodiments of the inventive technology the tasks (1) and (2) can be combined into a single-step method as follows.

Switch Function Applied to ODEs

In some embodiments, a switch function can be used to hold the differential variables static (i.e., constant or

unchanged) while the algebraic variables are subjected to the perturbations to find their consistent ICs using a numerical solver. Next, the differential variables can be unmasked and the system simulation (i.e., the DAEs simulation) begins in a continuous manner using the same solver. In some embodiments, the switch function gradually applies the ICs to the DAEs without a discrete jump. Therefore, the single-step method combines the initialization of the algebraic variables (i.e., obtaining the ICs) and the solution of the system (i.e., the solution of the DAEs that describe the physical system). In at least some embodiments, the single-step approach results in more robust solutions, because the system stiffness is reduced, enabling an increase in the perturbation value used to calculate the ICs for faster calculation of the ICs.

In some embodiments, the switch function applied to the ODEs is a hyperbolic tangent:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))) \quad \text{Eq. 1.7}$$

where q is a weighting factor determining the discreteness of the function, and t_j is the time allowed for the perturbation approach to find consistent algebraic ICs. The value of t_j can be scaled depending on the value of ε used for the perturbation. Subtracting t_j from the total solution time provides the original (simulation) time variable. The switch function can be applied to the ODEs as:

$$\frac{dy}{dt} = fT_H \quad \text{Eq. 1.8}$$

The switch function allows for the derivative of the differential variables to be set to zero for the duration of the initialization of the algebraic variables and be set to the function f for the simulation after initialization. The adaptive solvers used on the system can determine time steps as needed from time t=0 to time=tj, and will find the consistent IC for z. In at least some embodiments, the switch function approximates a discrete jump with a continuous function.

The continuous nature of the switch function also allows for minor corrections of the converged ICs at the end of the initialization time (i.e., the beginning of the simulation time for the DAEs). As a result, the converged ICs allow for less restrictive perturbation values (e.g., a larger perturbation value or an initial guess that is further away from the correct value) when compared to the conventional methods in which the two steps are calculated separately. In at least some embodiments, the inventive technology also saves a considerable amount of time that the conventional two-step method needs for stopping the solver after initialization, substituting the consistent initial values, and starting the ODE solver again for simulating the entire system of DAEs. Additionally, in at least some embodiments, combining the two steps reduces the time required to properly format the set of equations for solving.

Combining the DAEs into a System of ODEs

In some embodiments, the system of DAEs (e.g., the system described by Equations 1.1 and 1.2) can be restructured into a single-step ODE system as shown in Equations 1.9 and 1.10 below:

$$\frac{dy}{dt} = fT_H \quad \text{Eq. 1.9}$$

-continued

$$\varepsilon\frac{dg}{dt} = -g \quad \text{Eq. 1.10}$$

In some embodiments, the perturbed form of the AEs (e.g., Equation 1.10) remains in implicit form because its left hand side incudes differential variables or their derivatives (e.g., y or dy/dt). This implicit form of Equation 1.10 may be acceptable for small sets of equations, but may cause solvers to fail for large sets of equations. Therefore, for large sets of equations, the derivatives of the equations can be removed by substituting the original ODE equations (e.g., Equation 1.1). Then ICs may be substituted for the differential variables that remain. The explicit form can be written as:

$$\varepsilon\frac{dg}{dt}_{\left(at\ y=y_0, z=z_0, \frac{dy}{dt}=f_0\right)} = -g \quad \text{Eq. 1.11}$$

Equation 1.11 can replace Equation 1.10 in the single-step method. As a result of the substitution, both the initialization and the solution of the system of DAEs may be obtainable by the explicit solvers. After the substitution, Equations 2.9, 2.10, and 2.11 become ODEs that can be solved using explicit solvers in time or linearly implicit solvers in time. For example, in Maple, the linearly implicit stiff solver Rosenbrock may be used to solve these systems.

FIG. **1** is a flow chart **1000** of a single-step modeling method in accordance with an embodiment of the presently disclosed technology. In step **10**, a system of differential algebraic equations (DAE) is formed. Such a system of equations may represent a physical problem to be solved. In step **15**, the algebraic equations (AEs) and differential equation (DEs) are separated. In step **20**, the AEs can be solved by, for example, a perturbation method, to calculate the ICs from the AEs. In step **25**, the DEs are combined with a switch function that holds the variables of the DEs static (e.g., constant or near constant), while the variables in the AEs find consistent values using, e.g., a perturbation method of step **20**. In some embodiments, the switch function of step **25** can be tan h. In step **30**, the AEs and DEs are combined into a single system of DAEs. In step **40**, the algebraic values are initialized with ICs, the switch function allows solving of the DEs to start, and the DAEs are solved. In some embodiments, the DAEs can be solved using an explicit solver.

EXAMPLES

The examples below illustrate some applications of the single-step method. Some of the described examples are directed to a stiff electrochemical system. The examples include solving implicit ordinary differential equations (ODE) systems after converting them into a DAE form. The method described with respect to FIG. **1** is applied to Examples 1-5 below. In the Figures that show simulation results for examples 1-5, the initialization time is shown as negative, and the real simulation time of the problem is shown as positive.

Example 1

Index-1 DAE (One Algebraic and One Differential Variable)

In the system of equations below, y is the differential variable and z is the algebraic variable:

$$\frac{dy(t)}{dt} = -y(t)^2 + z(t) \quad \text{Eq. 1.12}$$

$$\cos(y(t)) - \sqrt{z(t)} = 0 \quad \text{Eq. 1.13}$$

For the system of Equations 1.12 and 1.13, the differential variable IC can be set as:

$$y(0)=0.25 \quad \text{Eq. 1.14}$$

For conventional methods, standard DAE solvers need the consistent IC for z:

$$z(0)=\cos(0.25)^2 \approx 0.938791 \quad \text{Eq. 1.15}$$

Standard solver packages may fail when the exact algebraic IC is not given (e.g., if the solver did not include initialization routines). The single-step proposed approach is applied below. A switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(1000)(t-1))) \quad \text{Eq. 1.16}$$

This switch function can be applied to the right hand side of the differential equation (DE) so that:

$$\frac{dy(t)}{dt} = (-y(t)^2 + z(t))\left(\frac{1}{2} + \frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.17}$$

Additionally, a perturbation can be applied to the algebraic equation (AE) such that

$$\varepsilon\left(\sin(y(t))\left(\frac{dy(t)}{dt}\right) + \frac{1\sqrt{z(t)}}{2z(t)}\frac{dz(t)}{dt}\right) = \cos(y(t)) - \sqrt{z(t)} \quad \text{Eq. 1.18}$$

The system of Equations 1.16 and 1.17 can be solved with an explicit (or linearly implicit) ODE solver. The IC of the algebraic variable does not have to be known a priori, but rather the combination of the switch function and perturbation can allow the IC for the algebraic variable to reach steady state during the first one second of the solution time, because T_H will be 0, therefore holding the differential variable constant during this initialization. After one second of the solution time, T_H achieves value one, and the solution of the system 1.16, 1.17 will start based on the ICs. In at least some embodiments, a reasonable initial guess must still be provided for the starting value of z. The time of initialization must be removed from the solution time in order to achieve the real simulation time of the system.

When compared to the conventional two-step perturbation approach, in some embodiments of the inventive technology the addition of the switch function allows for the initialization and solution to be calculated together in a single-step. In both the conventional two-step and the inventive single-step approaches, the algebraic variables generally converge to the same value for the same perturbation parameter ε. In general, smaller values of ε increase the accuracy of the converged value by ensuring that the converged value can be used as a consistent IC. However, a relatively small ε also increases the stiffness of the system. Conversely, a larger ε reduces the stiffness, but decreases the accuracy of the converged value. Furthermore, when ε becomes large enough, the converged value no long works as a consistent IC for a system of DAEs. The conventional two-step perturbation approach also typically requires much smaller values of perturbation for the initialization, therefore requiring a greater computational effort. Conversely, a too large E causes the two-step approach to fail once the converged value is outside of the consistent IC limit.

Unlike the conventional two-step method, the single-step method allows for a correction to the converged value at the end of initialization because of the continuous nature of the switch function. For instance, as the switch function starts to unfreeze the ODE variables, the converged value of the algebraic variable (as well as the IC for the differential variable) can further correct to consistent values. This correction will introduce a small amount of error, but it allows for a more robust method of solving by increasing the allowable converged value for the algebraic variables which will still solve the DAEs of the system.

In the example 1, the conventional two-step approach using Maple's dsolve (a Rosenbrock type solver) requires a converged value y(0) to satisfy:

$$0.9387903 < y(0) < 0.9387922 \quad \text{Eq. 1.19}$$

For the inventive single-step method that uses the switch function, the system of Equations 1.12, 1.13 can be solved with less than 0.001 error for all points after t=0.1 s of simulation time even if the requirement for the converged values y(0) is relaxed to:

$$0.9377018 < y(0) < 0.9398806 \quad \text{Eq. 1.20}$$

In at least some embodiments, a wider range of acceptable y(0) may increase the robustness of the solver and may allow for a wider allowable range of perturbation parameter ε. For example, if a starting guess of z(0)=0.8 was applied, the conventional two-step perturbation solution would require no larger than $\varepsilon=1.1\times10^{-6}$ in order to obtain a solution for initialization that is consistent for the system of DAEs. However, the inventive technology that uses a single-step method can solve the same system of equations with ε=0.1 (or even larger), as discussed with reference to FIG. **2** below.

FIG. **2** is a graph of results comparison between the conventional two-step method and inventive single-step method in accordance with an embodiment of the presently disclosed technology. The horizontal axis represent the time in seconds. The vertical axis represents values of y(t) and z(t) from the system of Equations 1.12, 1.13. The value q in Equation 1.7 is set to 1000. In at least some embodiments, the value of q affects the discreteness of the switch function and can increase the robustness of the solution. A detail graph shows the initialization of z(t) for the times that are close to t=0. FIG. **2** illustrates that both the conventional two-step method and the inventive single-step method can solve the system of Equations 1.12, 1.13. However, as explained in more detail with reference to FIGS. **3** and **4** below, the inventive single-step method can produce accurate results for a relatively wide ranges of initial guesses of z(t) (FIG. **3**) and perturbation parameters ε (FIG. **4**).

FIG. **3** is a graph of initialization periods for different initial algebraic guesses in the single-step method in accordance with an embodiment of the presently disclosed technology. FIG. **3** shows the initialization period for 8 different initial algebraic guesses where ε=0.1 and t_1=1 for all cases. All of the guesses (z(−1)=0.2-1.6) converge to the consistent IC of z(0)=0.938, and can be used to accurately solve the system of DAEs. Therefore, the system of Equations 1.12, 1.13 can be solved for a relatively wide range of initial guesses (0.2-1.6) of the algebraic variable z(t), which is normally not the case for the conventional two-step method, unless a very small perturbation parameters ε is used.

FIG. **4** is a graph of a convergence for several different perturbation values ε (ε=0.1, 0.05, 0.01, 0.001) in accordance with an embodiment of the presently disclosed tech-

nology. Generally, the perturbation value ε may affect the accuracy and convergence of the initialization. For example, smaller values of ε allow the initialization to converge over shorter simulation time t. Conversely, larger values of ε may result in an initialization that is not accurate enough (at a relatively short t) to satisfy the consistency condition. As illustrated in FIG. **4**, the range of perturbation values ε that spans two orders of magnitude (i.e., 0.001 to 0.1) still results in a consistent value of z(t) of about 0.938, thus demonstrating a robustness of the inventive single-step method.

Example 2

Wu and White Problem

Example 2 includes a two equation system representing a thin film nickel hydroxide electrode during the charging process. For at least some realistic values of the variable, the determination of consistent ICs would be difficult for the conventional two-step method. The system is represented by the following equations:

$$\frac{\rho V}{W}\frac{dy(t)}{dt} = \frac{j_1}{F} \quad \text{Eq. 1.21}$$

$$j_1 + j_2 - i_{app} = 0 \quad \text{Eq. 1.22}$$

Where,

$$j_1 = i_{o,1}\left[2(1-y(t))\exp\left(\frac{(z(t)-\phi_1)F}{2RT}\right) - 2y(t)\exp\left(\frac{(z(t)-\phi_1)F}{2RT}\right)\right] \quad \text{Eq. 1.23}$$

$$j_2 = i_{o,2}\left[\exp\left(\frac{(z(t)-\phi_2)F}{RT}\right) - \exp\left(\frac{(z(t)-\phi_2)F}{2RT}\right)\right] \quad \text{Eq. 1.24}$$

The differential variable y represents the nickel hydroxide mole fraction and the algebraic variable z represents the potential difference at the solid liquid interface. The parameters of the system are given in Table 1.

TABLE 1

Parameters for Nickel Hydroxide Electrode.

Symbol	Parameter	Value	Units
F	Faraday Constant	96487	C/mol
R	Gas Constant	8.3143	J/(mol K)
T	Temperature	303.15	K
ϕ_1	Equilibrium potential	0.42	V
ϕ_2	Equilibrium potential	0.303	V
W	Mass of active material	92.7	g
V	Volume	1×10^{-5}	m^3
i_{o1}	Exchange current density	1×10^{-4}	A/cm^2
i_{o2}	Exchange current density	1×10^{-10}	A/cm^2
i_{app}	Applied current	1×10^{-5}	A/cm^2
ρ	Density	3.4	g/cm^3

In a discharged state the mole fraction of the nickel hydroxide is estimated to be:

$$y(0)=0.05 \quad \text{Eq. 1.25}$$

Under the algebraic constraint the consistent IC for the potential must be:

$$z(0)\approx 0.350236 \quad \text{Eq. 1.26}$$

Several imaginary roots are also solutions to the algebraic constraint, but these are non-physical solutions. Therefore, the imaginary roots are excluded from the set of solutions as not applicable.

Table 2 shows the range of possible ICs for the algebraic variable that provides a solution for different solvers including the proposed single-step approach. The conventional methods use the first four solvers listed in Table 2 below. With the conventional methods, the solvers require initial guesses that are very close to the consistent values, for example ranging from z(0)=0.3502359 to z(0) being within a range from −1.27 to 1.87. However, with the inventive single-step method, the possible range of ICs is widened to the range from −9.13 to 9.85.

TABLE 2

Comparison of working ranges of initial algebraic guesses

Solver	Working range of initial guess
Conventional method with Maple dsolve	z(0) = 0.3502359, Exact conditions required
Conventional method with Matlab ode15i	0.342 < z(0) < 0.365
Conventional method with Matlab ode15s	0.271 < z(0) < 0.474
Conventional method with SUNDIALS IDA	−1.27 < z(0) < 1.87
Single-step method with Maple dsolve	−9.13 < z(0) < 9.85

FIG. **5** is a graph of the single-step solution for a full charge of an electrode of a battery in accordance with an embodiment of the presently disclosed technology. Here, the initial guess of z(0)=0.7 and the perturbation parameter ε=0.002 were used. As shown in Table 2 above, such an initial guess results in a converged solution for the inventive single-step method, whereas the conventional methods fail because the initial guess is too far from the true physical value of z(0). For at least some embodiments, for example for systems where the ICs are not easily available or obvious from the physical system, the expanded range of possible initial guesses may be important for obtaining a physical solution. As shown in FIG. **5**, the values of mole fraction y and potential z reach their final values at about 3,500 seconds. Therefore, in some embodiments, the time of 3,500 seconds signifies the end of the battery charging process.

Example 3

Implicit ODE Converted to DAE, and Solved with Explicit Solver

In some embodiments, the inventive technology can be used to solve implicit ODEs. An example of such implicit ODE is shown below:

$$\left(\frac{dy(t)}{dt}\right)^2 + \left(\frac{dy(t)}{dt}\right)(y(t)+1) + y(t) = \cos\left(\frac{dy(t)}{dt}\right) \quad \text{Eq. 1.27}$$

Generally, the problem described by Equation 1.27 cannot be directly solved using the explicit solvers in Maple. When attempting to use the direct solvers, Maple states that IC for dy/dt is not known or the system cannot be converted to the explicit ODE form. However, including a substitution:

$$\frac{dy(t)}{dt} = z(t) \quad \text{Eq. 1.28}$$

converts Eq. (3.16) into:

$$z(t)^2+z(t)(y(t)+1)+y(t)=\cos(z(t)) \quad \text{Eq. 1.29}$$

In at least some embodiments, the newly added variable z makes it possible to use the inventive single-step method. For example, Equations 1.28 and 1.29 can be rewritten as:

$$\varepsilon\left(2z(t)\frac{dz(t)}{dt}+\frac{dz(t)}{dt}(y(t)+1)+z(t)\frac{dy(t)}{dt}+\frac{dy(t)}{dt}+\sin(z(t))\frac{dz(t)}{dt}\right)=z(t)^2+(t)(y(t)+1)+y(t)-\cos((t)) \quad \text{Eq. 1.30}$$

$$\frac{dy(t)}{dt}=z(t)\left(\frac{1}{2}+\frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.31}$$

where q=1000 and t_j=1 for the switch function. FIG. **6** is a graph of an initialization and a simulation for the single-step for the system of Equations 1.30, 1.31 solved using ε=0.1 with the ICs of:

$$y(0)=0,z(0)=0 \quad \text{Eq. 1.32}$$

The converged value for z(0) (at t=0) from the initialization portion of the solver is 0.55. After t=0, the simulation produces a decreasing value of z and an increasing value of y as illustrated in the graph of FIG. **6**.

Example 4

Partial Differential Equations (PDEs) Discretized to DAEs

As explained above, the PDEs can be discretized into a system of DAEs. At least some of these systems include variables with explicit time derivatives (e.g., a concentration) and static variables (e.g., a potential which may not include time derivatives, but can still change with time because other variables in the system change with time). An example of such a system is shown in the following set of PDEs:

$$\frac{\partial y}{\partial t}=\frac{\partial^2 y}{\partial x^2}-y(1+z) \quad \text{Eq. 1.33}$$

$$\frac{\partial^2 z}{\partial x^2}=(1-y^2)\exp(-z) \quad \text{Eq. 1.34}$$

The above system of Equations 1.33, 1.34 may have the following boundary conditions:

$$\frac{\partial y}{\partial x}\Big|_{x=0}=0\ y|_{x=1}=1 \quad \text{Eq. 1.35}$$

$$\frac{\partial y}{\partial x}\Big|_{x=0}=0\ z|_{x=1}=0 \quad \text{Eq. 1.36}$$

Though ∂z/∂t is not present in the system, z can change with time as y changes with time. The system of Equations 1.33, 1.34 can be solved using numerical method of lines which discretize the spatial derivatives over a series of node points between the system's boundaries. When discretizing for the spatial variable the system becomes:

$$\frac{dy_i}{dt}=\frac{1}{h^2}(y_{i+1}-2y_i+y_{i-1})-y_i(1+z_i) \quad \text{Eq. 1.37}$$

-continued

$$\frac{1}{h^2}(z_{i+1}-2z_i+z_{i-1})=(1-y_i^2)\exp(-z_i) \quad \text{Eq. 1.38}$$

where h is the length between node points. The boundary conditions 1.35, 1.36 become:

$$\frac{1}{2h}(3y_0-4y_1+y_2)=0\ y_{N+1}=1 \quad \text{Eq. 1.39}$$

$$\frac{1}{2h}(3z_0-4z_1+z_2)=0\ z_{N+1}=0 \quad \text{Eq. 1.40}$$

where N is the number of interior node points of the system. When the single-step method is used, the system of Equations 1.35, 1.36 becomes:

$$\frac{dy_i}{dt}=\left[\frac{1}{h^2}(y_{i+1}-2y_i+y_{i-1})-y_i(1+z_i)\right]\left(\frac{1}{2}+\frac{1}{2}\tanh(1000(t-1))\right) \quad \text{Eq. 1.41}$$

$$\frac{-\varepsilon}{h^2}\left[\frac{dz_{i+1}}{dt}-2\frac{dz_i}{dt}+\frac{dz_{i-1}}{dt}+2y_i\frac{dy_i}{dt}\exp(-z_i)+(1-y_i^2)\frac{dz_i}{dt}\exp(-z_i)\right]=(1-y_i^2)\exp(-z_i)-\frac{1}{h^2}(z_{i+1}-2z_i+z_{i-1}) \quad \text{Eq. 1.42}$$

The boundary conditions can be rewritten as:

$$\frac{-\varepsilon}{2h}\left[3\frac{dy_0}{dt}-4\frac{dy_1}{dt}+\frac{dy_2}{dt}\right]=\frac{1}{2h}(3y_0-4y_1+y_2)-\varepsilon\frac{dy_{N+1}}{dt}=y_{N+1}-1 \quad \text{Eq. 1.43}$$

$$\frac{-\varepsilon}{2h}\left[3\frac{dy_0}{dt}-4\frac{dy_1}{dt}+\frac{dy_2}{dt}\right]=\frac{1}{2h}(3z_0-4z_1+z_2)-\varepsilon\frac{dy_{N+1}}{dt}=z_{N+1} \quad \text{Eq. 1.44}$$

The conventional two-step method using the standard solvers cannot solve Equations 1.41, 142 for a large number N using explicit solvers. Even with consistent ICs $y_i(0)$=1 and $z_i(0)$=0), N must be five or less to solve the system using Maple's dsolve. With the conventional two-step method, Maple attempts to convert the DAE system to an explicit ODE system of the form dy/dt=f. This attempt fails for larger values of N. However, when using the single-step method, the restrictions on the number of interior node points are relaxed, and the solving speed in Maple is increased without having to use solvers involving Newton type iterations. In some embodiments, larger values of N may be required for higher accuracy and better convergence.

FIG. **7** is a graph of a solution of DAEs 1.33, 1.34 using the single-step method and Maple dsolve routine in accordance with an embodiment of the presently disclosed technology. FIG. **7** shows the value of y at x=0, ⅓, ⅔, and 1 for N=2 and N=11 with $\varepsilon=1\times10^{-5}$). Consistent ICs ($y_i(0)$=1 and $z_i(0)$=0) were used for FIG. **7**. The values at N=11 have converged to more accurate values, especially for values closer to x=0. The proposed approach can use the standard Maple dsolve solver to solve for more internal node points, without having to use direct DAE solvers that use Newton-

Raphson type iterations. Furthermore, even at low node points the proposed approach is faster than standard solving techniques. For example, at N=5, using the single-step method Maple dsolve produces a solution in 159 ms, which is over an order of magnitude faster than the conventional two-step technique. A comparison of computational time required for the two-step and single-step methods is shown in Table 3.

TABLE 3

Computational time needed to solve Example 4

Internal Node points, N	Two-step method using Maple dsolve	Two-step method using BESIRK	Single-step method using Maple dsolve
3	0.172	0.359	0.094
4	0.561	0.468	0.25
5	1.981	0.642	0.156

TABLE 3-continued

Computational time needed to solve Example 4

Internal Node points, N	Two-step method using Maple dsolve	Two-step method using BESIRK	Single-step method using Maple dsolve
10	N/A	1.653	0.25
20	N/A	6.334	0.577
50	N/A	56.956	3.338
100	N/A	375.572	13.479

Example 5

Finite Difference Single Particle Model

In some embodiments of physical battery systems, when discretizing systems of PDEs that contain time derivatives in all the governing equations, the boundary conditions can yield algebraic equations. The electrochemistry occurring in an intercalation based secondary battery can be described by a single particle model (SPM). In some embodiments, the SPM can be used to model battery cycling as a good model for batteries with thin electrodes and low charge and discharge rates. The SPM tracks the diffusion of lithium inside the electrode particles of Li-ion batteries governed by Fick's second law of diffusion:

$$\frac{\partial c_i}{\partial t} = \frac{1}{r^2}\frac{\partial}{\partial r}\left(r^2 D_i \frac{\partial c_i}{\partial r}\right),\ i = p, n \qquad \text{Eq. 1.45}$$

with boundary conditions:

$$\frac{\partial c}{\partial r}\Big|_{r=0} = 0 \quad \frac{\partial c_i}{\partial r}\Big|_{r=R_i} = -\frac{j_i}{D_i} \qquad \text{Eq. 1.46}$$

where

$$j_i = \frac{\pm i_{app}}{a_i 1_i F} = \pm 2k_i c_e^{0.5}(c_{i,max} - c_{i,surf})^{0.5} c_{i,surf}^{0.5} \sinh\left(\frac{F(\Phi_i - U_i)}{2RT}\right) \qquad \text{Eq. 1.47}$$

The parameters for the system described by Equations 1.45-1.47 are given in Table 4.

TABLE 4

Parameters for Single Particle Model

Symbol	Parameter	Value		Units
F	Faraday Constant	96487		C/mol
R	Gas Constant	8.3143		J/(mol K)
T	Temperature	303.15		K
c_e	Electrolyte concentration	1000		mol/m^3
i_{app}	Applied current	1		C
		Cathode (p)	Anode (n)	
D	Solid phase Diffusion Coefficient	1.0×10^{-14}	3.9×10^{-14}	m^2/s
a	particle surface area to volume	8.85×10^5	7.236×10^5	m^2/m^3
$_c$max	Maximum lithium concentration	51555	30555	mol/m^3
l	Cell thickness	80×10^{-6}	88×10^{-6}	m
R	Electrode particle radius	2×10^{-6}	2×10^{-5}	m
k_o	Reaction rate	2.334×10^{-11}	5.0307×10^{-11}	m$^{2.5}$/(mol$^{0.5}$s)
U	Overpotential	is a function of state-of-charge		

The system described by Equations 1.45-1.47 can be solved using numerical method of lines which discretize the spatial derivatives over a series of node points, N, within the particle, while the time derivative remains. This discretization creates a DAE system with 2N differential equations and four algebraic equations (the boundary conditions). The system can be solved for the concentration of lithium at every node point in the electrodes and then the electrode potentials, Φ, can be determined from the electrode surface concentrations. In some embodiments, a discharged state the initial concentration for lithium throughout the electrodes is:

$$c_p(0)=305.55 c_n(0)=49503.11 \qquad \text{Eq. 1.48}$$

with units of mol/m^3. When written in finite difference form (using a third order Euler forward approach) and applying the single-step method, the modeled system becomes:

$$\frac{dc_{i,j}}{dt} = \frac{D_i}{j^2 h^2 R_i^2}[c_{i,j+1}(j^2 + j) + c_{i,j-1}(j^2 - j) - 2j^2 c^{i,j}] \qquad \text{Eq. 1.49}$$

$$\left(\frac{1}{2} + \frac{1}{2}\tanh(1000(t-1))\right)$$

with boundary conditions converted to:

$$\frac{-\varepsilon}{2h}\left(4\frac{dc_{i,1}}{dt}-\frac{dc_{i,2}}{dt}-3\frac{dc_{i,0}}{dt}\right)=4c_{i,1}-c_{i,2}-3c_{i,0} \quad \text{Eq. 1.50}$$

$$\frac{-\varepsilon}{2h}\left(4\frac{dc_{i,N}}{dt}-\frac{dc_{i,N-1}}{dt}-3\frac{dc_{i,N+1}}{dt}\right)= \quad \text{Eq. 1.51}$$

$$4c_{i,N}-c_{i,N-1}-3c_{i,N+1}-\frac{j_i}{D_i}$$

Results for the concentration values (using five internal node points N) at individual and boundary points are shown in FIG. **8**. The inset shows the difference in concentration values at short times, and the ability of the proposed approach to converge to the initial conditions for all concentrations. With the conventional two-step model using the Rosenbrock stiff solver in MAPLE, the system can be solved for a complete IC rate charge with up to 58 internal node points before the solver fails due to memory constraints. When using the single-step method, the same system under the same memory constraints can be solved for over 2500 internal node points. The ICs for both cases are shown in Equation 1.48. The switch function was applied with t_j=1 and q=1000, and the perturbation value was $\varepsilon=1\times10^{-5}$. The system was solved with a Rosenbrock solver under both standard FD scheme using the single-step method.

Table 5 shows the solving speed for simulating the lithium concentration throughout the electrode particles for a range of node points.

TABLE 5

Computational time		
Internal node points, N	Standard FD Comp time (ms)	Proposed single step Comp time (ms)
5	111	55
25	3340	94
50	23715	200
100	N/A	404
500	N/A	4377

For example, for a SPM with 50 internal node points, resulting in a system of 4 AEs and 100 ODEs, the single-step method reduced computational time by two orders of magnitude (from 23,715 ms to 200 ms). In some embodiments, the single-step method reduces the computational burden on the solver, therefore enabling the solver to solve larger systems.

Battery Charging System

FIG. **9** is a partially schematic view of a battery charging system **1010** in accordance with an embodiment of the presently disclosed technology. In some embodiments, the battery charging system **1010** may include a power supply **110** and a DC supply **120** that provides power to an electronics board **140**. The electronics board **140** may include several components including a programmable chip **141** (e.g., an EPROM). A battery charging housing **150** may include one or more rechargeable batteries **160***a*, **160***b*. In some embodiments, the battery charging housing may be replaced by connectors that are electrically connected to the electronics board **140** with conductive wires.

The Operation of the DC supply **120** and/or the electronics board **140** may be controlled by a controller **130**. For example, the controller **130** may load data onto the programmable chip **141** that, in turn, controls the DC supply **120**. The data loaded by the controller **130** may be obtained from the single-step method for modeling the ADE; DAEs that describe, for example, charging/discharging, heating, cycling, etc., for the rechargeable batteries. For example, data (e.g., parameters)obtained by the Examples 1-5 above may be used to control charging/discharging current, charging/discharging voltage, temperature of the battery, peak efficiency of the battery, optimal number of charging/discharging cycles, etc., of the batteries **160***a*, **160***b* through the controller **130** and/or programmable chip **141**. In some embodiments, the controller **130** may control the DC supply **120** directly. In some embodiments, the controller **130** may be part of (e.g., may be carried by) the electronics board **140**.

FIG. **10** is a block diagram of a controller **1020** (e.g., a computing device) for the battery charging system in accordance with an embodiment of the presently disclosed technology. The controller **1020** includes one or more input devices **220** that provide input to a CPU (processor) **210**. Input devices **220** can include, for example, a mouse, a keyboard, a touchscreen, an infrared sensor, a touchpad, wearable input devices, a camera or image-based input device, microphone, or other input devices. The CPU **210** may be a single processing unit or multiple processing units in a device or distributed across multiple devices. The CPU **210** may be coupled to other hardware devices, for example, with the use of a BUS, such as a PCI BUS or SCSI BUS. Further, the CPU **210** may communicate with a hardware controller for devices such as for a display **230**. The display **230**, for example, may be used to display text and graphics. One example of a suitable display **230** is a touchscreen that provides graphical and textual visual feedback to a user. In some embodiments, the display **230** includes the input devices **220** as part of the display, such as when the input device is a touchscreen. In some embodiments, the display **230** is separate from the input device **220**. Examples of standalone display devices include, for example, an LCD display screen, an LED display screen, a projected display (such as a heads-up display device), and so on. Other I/O devices **240** may also be coupled to the CPU **210**, such as a video or audio card, USB or other external devices, printer, speakers, CD-ROM drive, DVD drive, disk drives, Blu-Ray devices, battery connection cables, or battery measurement tools. In some implementations, other I/O devices **240** also include a communication device capable of communicating wirelessly or wire-based with a network node. The communication device may communicate with another device or a server through a network using, for example, TCP/IP protocols.

The CPU **210** can access a memory **250**. The memory **250** can include one or more hardware devices for volatile and non-volatile storage, and may include both read-only and writable memory. For example, the memory **250** may comprise random access memory (RAM), read-only memory (ROM), writable non-volatile memory, such as flash memory, hard drives, floppy disks, CDs, DVDs, magnetic storage devices, tape drives, device buffers, and so forth. The memory **250** can include non-transitory electrical signals on the underlying hardware. The memory **250** can include program memory **260** that contains programs and software, such as an operating system **261**, geotemporal mapper **262**, and other application programs **263**. The memory **250** also includes data memory **270** that includes any configuration data, settings, user options and preferences that may be needed by the program memory **260**. System **1020** may include general purpose or special purpose computing system environments or configurations.

Many embodiments of the technology described below may take the form of computer- or controller-executable instructions, including routines executed by a programmable

computer or controller. Those skilled in the relevant art will appreciate that the technology can be practiced on computer/controller systems other than those shown and described below. The technology can be embodied in a special-purpose computer, controller or data processor that is specifically programmed, configured or constructed to perform one or more of the computer-executable instructions described below. Accordingly, the terms "computer" and "controller" as generally used herein refer to any data processor and can include Internet appliances and hand-held devices (including palm-top computers, wearable computers, cellular or mobile phones, multi-processor systems, processor-based or programmable consumer electronics, network computers, mini computers and the like). Information handled by these computers can be presented at any suitable display medium, including a CRT display or LCD.

The technology can also be practiced in distributed environments, where tasks or modules are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules or subroutines may be located in local and remote memory storage devices. Aspects of the technology described below may be stored or distributed on computer-readable media, including magnetic or optically readable or removable computer disks, as well as distributed electronically over networks. Data structures and transmissions of data particular to aspects of the technology are also encompassed within the scope of the embodiments of the technology.

From the foregoing, it will be appreciated that specific embodiments of the technology have been described herein for purposes of illustration, but that various modifications may be made without deviating from the disclosure. For example, in some embodiments, the EPROM chip may be a part of the controller. Moreover, while various advantages and features associated with certain embodiments have been described above in the context of those embodiments, other embodiments may also exhibit such advantages and/or features, and not all embodiments need necessarily exhibit such advantages and/or features to fall within the scope of the technology. Accordingly, the disclosure can encompass other embodiments not expressly shown or described herein.

The invention claimed is:

1. A method for charging a rechargeable battery comprising:

generating, by a computing device, a model of the rechargeable battery;

determining one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

holding differential variables of the model static by a switch function while determining the one or more initial conditions for one or more algebraic variables;

applying the initial conditions to differential equations of the model by the switch function;

determining one or more parameters for the rechargeable battery by solving algebraic and differential equations of the model with the solver; and

by a programmable chip, adjusting a state of the battery based on the one or more parameters by electrically connecting a DC power supply to the rechargeable battery,

wherein the switch function is a tan h function.

2. The method of claim **1**, wherein adjusting the state of the battery includes at least one of adjusting a charging/discharging current, a charging/discharging voltage, a temperature of the battery, a peak efficiency of the battery, or an optimal number of charging/discharging cycles.

3. The method of claim **1**, wherein the model comprises a set of differential algebraic equations (DAEs).

4. The method of claim **3**, further comprising separating the DAEs into at least one algebraic equation (AE) and at least one differential equation (DE).

5. The method of claim **3**, wherein the one or more parameters for the rechargeable battery comprise a solution of the set of the DAEs.

6. The method of claim **1**, wherein the initial conditions are determined by perturbations.

7. The method of claim **1**, wherein the solver is a Rosenbrock type solver.

8. The method of claim **1**, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

9. A system for charging a rechargeable battery comprising:

a computing device in electrical communication with a programmable chip on an electronics board, the computing device configured to:

generate a model of the rechargeable battery;

determine one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

hold differential variables of the model static by a switch function while the one or more initial conditions are being determined for one or more algebraic variables; and

apply the initial conditions to differential equations of the model by the switch function, and determine one or more parameters for the rechargeable battery by solving the algebraic and differential equations of the model with the solver; and

the programmable chip of the electronics board configured to electrically connect a DC power supply to the rechargeable battery,

wherein the electronics board is configured to adjust charging or discharging of the battery based on the one or more parameters received from the computing device,

wherein the switch function is a tan h function.

10. The system of claim **9**, further comprising one or more rechargeable batteries.

11. The system of claim **10** wherein the one or more rechargeable batteries are lithium-ion batteries.

12. The system of claim **9**, wherein the programmable chip is an EPROM carried by the electronics board, wherein the EPROM is:

configured to receive the one or more parameters received from the computing device, and

configured to adjust a charging voltage to the rechargeable battery based on the one or more parameters received from the computing device.

13. The system of claim **9**, further comprising a housing for rechargeable batteries.

14. The system of claim **9**, wherein the computing device is a controller.

15. The system of claim **14**, wherein the controller is carried by the electronics board.

16. The system of claim 9, wherein the model comprises a set of differential algebraic equations (DAEs).

17. The system of claim 16, wherein the one or more parameters for the rechargeable battery comprise a solution of the set of the DAEs.

18. The system of claim 9, wherein the initial conditions are determined by perturbations.

19. The system of claim 9, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

20. A computer-readable storage device storing computer-executable instructions, the instructions causing charging a rechargeable battery by:

generating, by a computing device, a model of the rechargeable battery;

determining one or more initial conditions for one or more algebraic variables of the model using a solver based on perturbations;

holding differential variables of the model static by a switch function while determining the one or more initial conditions for one or more algebraic variables;

applying the initial conditions to differential equations of the model by the switch function;

determining one or more parameters for the rechargeable battery by solving algebraic and differential equations of the model with the solver; and

adjusting a state of the battery based on the one or more parameters,

wherein the switch function is a tan h function.

21. The computer-readable storage device of claim 20, further comprising instructions for separating a set of differential algebraic equations (DAEs) into at least one algebraic equation (AE) and at least one differential equation (DE).

22. The computer-readable storage device of claim 20, wherein the one or more parameters of the rechargeable battery comprise a solution of the set of the DAEs.

23. The computer-readable storage device of claim 20, wherein the initial conditions are determined by perturbations.

24. The computer-readable storage device of claim 20, wherein the switch function is defined as:

$$T_H = \tfrac{1}{2}(1+\tan h(q(t-t_j))),$$

where q is a weighting factor determining the discreteness of the function, and tj is the time allowed for the perturbation to find consistent algebraic initial conditions.

* * * * *

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डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 386696-001

तारीख / Date : 21/05/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *A DEVICE FOR DETERMINATION ARRHYTHMIA CLASSIFICATION OF ECG* से संबंधित है, का पंजीकरण, श्रेणी 24-01 में 1.Mr. Rajesh Pashikanti 2. Dr. C.Y.Patil 3.Dr. Amita Anirudhe Shinde के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-01 in respect of the application of such design to *A DEVICE FOR DETERMINATION ARRHYTHMIA CLASSIFICATION OF ECG* in the name of 1.Mr. Rajesh Pashikanti 2. Dr. C.Y.Patil 3.Dr. Amita Anirudhe Shinde.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि : 05/09/2023
Date of Issue :

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
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*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निबंधनों के अधीन, पाँच वर्षों की अतिरिक्त अवधि के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्यवाहियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

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CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2021100238

The Commissioner of Patents has granted the above patent on 31 March 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Girish Vithalrao Lakhekar of Assistant Professor, Department of Instrumentation Engineering, College of Engineering Pune Maharashtra 411005 India

Laxman Madhavrao Waghmare of Dean (Science and Technology), Swami Ramanand Teerth Marathwada, University Nanded Maharashtra 431606 India

Dipali Rohit Shende of Associate Professor, Department of Instrumentation, Engineering AISSMS Institute of Information Technology Pune Maharashtra 411001 India

Title of invention:

ADAPTIVE SPATIAL TRAJECTORY TRACKING CONTROL FOR AUTONOMOUS UNDERWATER VEHICLE

Name of inventor(s):

Lakhekar, Girish Vithalrao; Madhavrao Waghmare, Laxman and Rohit Shende, Dipali

Term of Patent:

Eight years from 14 January 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

COMMONWEALTH OF AUSTRALIA AUSTRALIA PATENT OFFICE

Dated this 31st day of March 2021

Commissioner of Patents

PATENTS ACT 1990

The Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.

Extracts from the Patents Act, 1990

Sect 120(1A) Infringement proceedings in respect of an innovation patent cannot be started unless the patent has been certified.

Sec 128 **Application for relief from unjustified threats**

(1) Where a person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings a person aggrieved may apply to a prescribed court, or to another court having jurisdiction to hear and determine the application, for:

(a) a declaration that the threats are unjustifiable; and

(b) an injunction against the continuance of the threats; and

(c) the recovery of any damages sustained by the applicant as a result of the threats.

(2) Subsection (1) applies whether or not the person who made the threats is entitled to, or interested in, the patent or a patent application.

Sec 129A **Threats related to an innovation patent application or innovation patent and courts power to grant relief.**

Certain threats of infringement proceedings are always unjustifiable.

(1) If:

(a) a person:

(i) has applied for an innovation patent, but the application has not been determined; or

(ii) has an innovation patent that has not been certified; and

(b) the person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings in respect of the patent applied for, or the patent, as the case may be;

then, for the purposes of an application for relief under section 128 by the person threatened, the threats are unjustifiable.

Courts power to grant relief in respect of threats made by the applicant for an innovation patent or the patentee of an uncertified innovation patent

(2) If an application under section 128 for relief relates to threats made in respect of an innovation patent that has not been certified or an application for an innovation patent, the court may grant the application the relief applied for.

Courts power to grant relief in respect of threats made by the patentee of certified innovation patent

(3) If an application under section 128 for relief relates to threats made in respect of a certified innovation patent, the court may grant the applicant the relief applied for unless the respondent satisfies the court that the acts about which the threats were made infringed, or would infringe, a claim that is not shown by the applicant to be invalid.

Schedule 1 **Dictionary**

certified, in respect of an innovation patent other than in section 19, means a certificate of examination issued by the Commissioner under paragraph 101E(e) in respect of the patent

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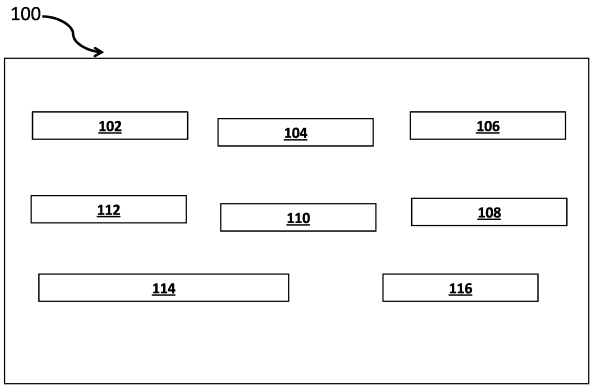
(73) Name und Wohnsitz des Inhabers:
Jogdand, Vishakha Vishwanath, Aurangabad, Maharashtra, IN; Lakhekar, Girish Vithalrao, Pune, Maharashtra, IN; Malwatkar, Gajanan Madhavrao, Jalgaon, Maharashtra, IN; Shende, Dipali Rohit, Pune, Maharashtra, IN

(74) Name und Wohnsitz des Vertreters:
Hohendorf Kierdorf Patentanwälte PartGmbB, 50672 Köln, DE

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen.

(54) Bezeichnung: **Ein analoges Emulatorsystem für die Temperaturregelung eines Wärmetauschers**

(57) Hauptanspruch: Ein analoges Emulatorsystem zur Temperaturregelung eines Wärmetauschers, wobei das System Folgendes umfasst:
einen FONP-PI-Regler, der ein nichtlinearer prädiktiver PI-Regler mit gebrochener Ordnung ist, um die Stabilität und die Leistung des geschlossenen Regelkreises bzw. des Reglers zu verbessern und die Zeit bis zum Erreichen des gewünschten Sollwerts zu minimieren;
ein Tiefpassfilter gebrochener Ordnung zur Beseitigung der durch Messrauschen und Verzerrungen im Steuersignal verursachten Effekte und zur Bereitstellung eines glatten Steuersignals;
einen Wärmetauscher, an den ein gleichmäßiges Steuersignal angelegt wird, wobei der Wärmetauscher den Störeffekt aufweist, und wobei der Wärmetauscher in einem analogen Schaltungsmodell dargestellt ist, das mit Hilfe einer kostengünstigen Schaltung entworfen wurde;
ein Totzeitkompensator gebrochener Ordnung, der in dem Ausgangsrückkopplungspfad eingesetzt wird, zur Verringerung des Totzeiteffekts bei dem Temperaturregelungsproblem und zur Überwindung des Problems der großen Regelwirkung und des Ableitungskicks in dem prädiktiven PI-Regler verwendet wird; und
eine Abstimmeinheit zum Abstimmen des FONP-PI-Reglers, um eine gewünschte Leistung durch Einstellen von Verstärkungen über den Widerstand von Operationsverstärkern in dem analogen Schaltungsmodell zu erhalten, wobei die Abstimmeinheit drei Abstimmungsparameter enthält.



Deutsches Patent- und Markenamt

Register information for utility models

File number DE: 20 2022 100 696.2 (status: pending/in force, status on: April 4, 2022)

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BASE DATA			
INID	**criteria**	**field**	**contents**
	property right type	SART	utility model
	status	ST	Pending/In Effect
21	Case number DE	DAKZ	20 2022 100 696.2
54	designation/title	ti	An analog emulator system for heat exchanger temperature control
51	IPC main class	ICM (ICMV)	G05D 23/19 (2006.01)
51	IPC minor class(es)	ICS (ICSV)	G05B 11/42 (2006.01)
22	Filing date DE	DATE	07.02.2022
47	registration day	ET	02/17/2022
45	Date of publication of the entry in the Patent Gazette	PET	03/31/2022
71/73	Applicant/Owner	INH	Jogdand, Vishakha Vishwanath, Aurangabad, Maharashtra, IN; Lakhekar, Girish Vithalrao, Pune, Maharashtra, IN; Malwatkar, Gajanan Madhavrao, Jalgaon, Maharashtra, IN; Shende, Dipali Rohit, Pune, Maharashtra, IN
74	representative	VTR	Hohendorf Kierdorf Patent Attorneys PartGmbB, 50672 Cologne, DE
10	Published DE documents	DEPN	Original document: DE202022100696U1; Searchable text: DE202022100696U1
	delivery address		Hohendorf Kierdorf Patent Attorneys PartGmbB, 50672 Cologne, DE
	Due date	FT FG	02/28/2025 maintenance fee for the 4th-6th year
43	initial release date	PUB	02/17/2022
	Day of first transfer to DPMAregister	ENERGIZED	02/17/2022
	Day of the (last) update in DPMAregister	REG	03/31/2022 (show all update days)

PROCEDURAL DATA					
position	**procedure type**	**status of proceedings**	**status of proceedings**	**Published in the Patent Gazette of**	**Show all details**
1	pre-trial	The application is in the preliminary examination	07.02.2022		view detail
2	utility model proceedings	Registration of the utility model	02/17/2022		view detail
3	publications	utility model specification	03/31/2022	03/31/2022	view detail

You are here: > DPMAregister homepage > Patents and utility models > Detailed view

Bundesrepublik Deutschland

Urkunde

über die Eintragung des
Gebrauchsmusters Nr. 20 2022 100 696

Bezeichnung:
Ein analoges Emulatorsystem für die Temperaturregelung eines Wärmetauschers

IPC:
G05D 23/19

Inhaber/Inhaberin:
Jogdand, Vishakha Vishwanath, Aurangabad, Maharashtra, IN
Lakhekar, Girish Vithalrao, Pune, Maharashtra, IN
Malwatkar, Gajanan Madhavrao, Jalgaon, Maharashtra, IN
Shende, Dipali Rohit, Pune, Maharashtra, IN

Tag der Anmeldung:
07.02.2022

Tag der Eintragung:
17.02.2022

Die Präsidentin des Deutschen Patent- und Markenamts

Cornelia Rudloff-Schäffer

Cornelia Rudloff-Schäffer

München, 17.02.2022

Die Voraussetzungen der Schutzfähigkeit werden bei der Eintragung eines Gebrauchsmusters nicht geprüft.
Den aktuellen Rechtsstand und Schutzumfang entnehmen Sie bitte dem DPMAregister unter www.dpma.de.

Australian Government

IP Australia

CERTIFICATE OF GRANT

INNOVATION PATENT

Patent number: 2021106139

The Commissioner of Patents has granted the above patent on 17 November 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Haridas Dadarao Gadade of College of Engineering, Pune, Wellesely Rd, Shivajinagar Pune Maharashtra 411005 India

D. K. Kirange of 31 A Guukul Colony Jalgaon Maharashtra 425001 India

Title of invention:

A SYSTEM AND METHOD FOR DETECTING DISEASES IN TOMATO PLANT

Name of inventor(s):

Gadade, Haridas Dadarao and Kirange, D. K.

Term of Patent:

Eight years from 20 August 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

COMMONWEALTH OF AUSTRALIA AUSTRALIA PATENT OFFICE

Dated this 17th day of November 2021

Commissioner of Patents

PATENTS ACT 1990

The Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.

Extracts from the Patents Act, 1990

Sect 120(1A) Infringement proceedings in respect of an innovation patent cannot be started unless the patent has been certified.

Sec 128 **Application for relief from unjustified threats**

(1) Where a person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings a person aggrieved may apply to a prescribed court, or to another court having jurisdiction to hear and determine the application, for:

(a) a declaration that the threats are unjustifiable; and

(b) an injunction against the continuance of the threats; and

(c) the recovery of any damages sustained by the applicant as a result of the threats.

(2) Subsection (1) applies whether or not the person who made the threats is entitled to, or interested in, the patent or a patent application.

Sec 129A **Threats related to an innovation patent application or innovation patent and courts power to grant relief.**

Certain threats of infringement proceedings are always unjustifiable.

(1) If:

(a) a person:

(i) has applied for an innovation patent, but the application has not been determined; or

(ii) has an innovation patent that has not been certified; and

(b) the person, by means of circulars, advertisements or otherwise, threatens a person with infringement proceedings or other similar proceedings in respect of the patent applied for, or the patent, as the case may be;

then, for the purposes of an application for relief under section 128 by the person threatened, the threats are unjustifiable.

Courts power to grant relief in respect of threats made by the applicant for an innovation patent or the patentee of an uncertified innovation patent

(2) If an application under section 128 for relief relates to threats made in respect of an innovation patent that has not been certified or an application for an innovation patent, the court may grant the application the relief applied for.

Courts power to grant relief in respect of threats made by the patentee of certified innovation patent

(3) If an application under section 128 for relief relates to threats made in respect of a certified innovation patent, the court may grant the applicant the relief applied for unless the respondent satisfies the court that the acts about which the threats were made infringed, or would infringe, a claim that is not shown by the applicant to be invalid.

Schedule 1 **Dictionary**

certified, in respect of an innovation patent other than in section 19, means a certificate of examination issued by the Commissioner under paragraph 101E(e) in respect of the patent

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022112977
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE

(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	365518
आवेदन सं. / Application No.	:	201621007499
फाइल करने की तारीख / Date of Filing	:	03/03/2016
पेटेंटी / Patentee	:	1.DR. PARAG SADGIR 2.PRIYANAND AGALE

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SELF-PURIFICATION BASED POLLUTED WATER PURIFICATION नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 3rd day of March 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SELF-PURIFICATION BASED POLLUTED WATER PURIFICATION as disclosed in the above mentioned application for the term of 20 years from the 3rd day of March 2016 in accordance with the provisions of the Patents Act,1970.

एकस्य कार्यालय THE PATENT OFFICE GOVT.OF INDIA भारत सरकार

अनुदान की तारीख :
Date of Grant : 28/04/2021

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **3rd day of March 2018** को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3rd day of March 2018 and on the same day in every year thereafter.

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

(http://ipindia.nic.in/index.htm)

INTELLECTUAL PROPERTY INDIA
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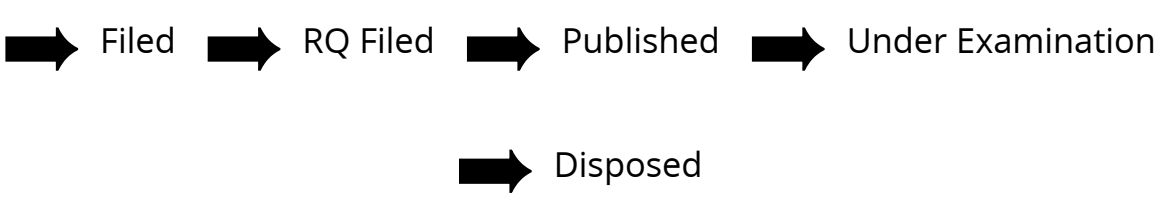
GEOGRAPHICAL INDICATIONS

(http://ipindia.nic.in/index.htm)

Application Details	
APPLICATION NUMBER	202121011613
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	18/03/2021
APPLICANT NAME	COLLEGE OF ENGINEERING
TITLE OF INVENTION	COMPLEX PARTIAL EPILEPTIC SEIZURE DETECTION SYSTEM
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	chirag@inkidee.com
ADDITIONAL-EMAIL (As Per Record)	chirag@inkidee.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	15/03/2022
PUBLICATION DATE (U/S 11A)	23/09/2022
REPLY TO FER DATE	01/02/2023

Application Status	
APPLICATION STATUS	Reply Filed. Application in amended examination

View Documents



In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

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सत्यमेव जयते

क्रम सं/SL No :022142824

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	530699
आवेदन सं. / Application No.	:	4865/MUM/2015
फाइल करने की तारीख / Date of Filing	:	28/12/2015
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, SHIVAJINAGAR, PUNE, AN AUTONOMOUS INSTITUTE OF GOVERNMENT OF MAHARASHTRA

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *UNDER RUN PROTECTION DEVICE FOR FOUR WHEELER VEHICLES HAVING LOW GROUND CLEARANCE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2015 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *UNDER RUN PROTECTION DEVICE FOR FOUR WHEELER VEHICLES HAVING LOW GROUND CLEARANCE* as disclosed in the above mentioned application for the term of 20 years from the 28th day of December 2015 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 28/03/2024
Date of Grant :

उन्नत की चंडिल
पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2017 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28th day of December 2017 and on the same day in every year thereafter.

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सत्यमेव जयते

क्रम सं/SL No :022138551

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	510228
आवेदन सं. / Application No.	:	201821011503
फाइल करने की तारीख / Date of Filing	:	28/03/2018
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE
आविष्कारकों का नाम /Name of Inventor(s)	:	1.JUILEE DESHPANDE 2.GANDHALI KELKAR 3.AMAN NADAF 4.PRAKASH BHAVE 5.SANDEEP ANASANE 6.MAYUR SANAS 7.ARATI MULAY 8.BHARATKUMAR BHAGATRAJ AHUJA

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *AN ASSISTIVE MECHANISM FOR X-RAY IMAGE ENHANCEMENT* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *AN ASSISTIVE MECHANISM FOR X-RAY IMAGE ENHANCEMENT* as disclosed in the above mentioned application for the term of 20 years from the 28th day of March 2018 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 13/02/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2020 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28th day of March 2020 and on the same day in every year thereafter.

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सत्यमेव जयते

क्रम सं/SL No :022136715

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	501361
आवेदन सं. / Application No.	:	201621034738
फाइल करने की तारीख / Date of Filing	:	11/12/2016
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A SYSTEM AND METHOD FOR DEVELOPMENT OF A PATIENT SPECIFIC PATH GUIDANCE TOOL* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2016 के ग्यारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A SYSTEM AND METHOD FOR DEVELOPMENT OF A PATIENT SPECIFIC PATH GUIDANCE TOOL* as disclosed in the above mentioned application for the term of 20 years from the 11th day of December 2016 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 19/01/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2018 के ग्यारहवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11th day of December 2018 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022141738

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	525816
आवेदन सं. / Application No.	:	202021038770
फाइल करने की तारीख / Date of Filing	:	08/09/2020
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE
आविष्कारकों का नाम /Name of Inventor(s)	:	1.SWAPNIL AJIT BUKSHETE 2.SANDEEP ANASANE 3.BHARATKUMAR BHAGATRAJ AHUJA 4.NIKHIL PANSE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A HAND REHABILITATION DEVICE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2020 के आठवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A HAND REHABILITATION DEVICE* as disclosed in the above mentioned application for the term of 20 years from the 8th day of September 2020 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 14/03/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2022 के आठवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 8th day of September 2022 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022139660

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	515675
आवेदन सं. / Application No.	:	201821011504
फाइल करने की तारीख / Date of Filing	:	28/03/2018
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A DERMO-EPIDERMAL SUSPENSION SPRAY DEVICE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A DERMO-EPIDERMAL SUSPENSION SPRAY DEVICE* as disclosed in the above mentioned application for the term of 20 years from the 28th day of March 2018 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 27/02/2024
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2020 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28th day of March 2020 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रम सं/SL No :022125039

पेटेंट कार्यालय,भारत सरकार | The Patent Office, Government Of India

पेटेंट प्रमाण पत्र | Patent Certificate

(पेटेंट नियमावली का नियम 74) | (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	435205
आवेदन सं. / Application No.	:	201821011502
फाइल करने की तारीख / Date of Filing	:	28/03/2018
पेटेंटी / Patentee	:	COLLEGE OF ENGINEERING, PUNE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित *A DEVICE TO MONITOR AND DETECT OBSTRUCTION IN AN ENDOTRACHEAL TUBE* नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled *A DEVICE TO MONITOR AND DETECT OBSTRUCTION IN AN ENDOTRACHEAL TUBE* as disclosed in the above mentioned application for the term of 20 years from the 28th day of March 2018 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख : 19/06/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2020 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28th day of March 2020 and on the same day in every year thereafter.