



उत्पादन अभियांत्रिकी विभाग
वीर सुरेंद्र साए प्रौद्योगिकी विश्व विद्यालयबुर्ला, ओडिशा
Veer Surendra Sai University of Technology Burla, Odisha

DETAILS OF PATENT PUBLICATIONS

SL No	Title of the invention	Name of the Faculty(s)	Patent Application No.	Publication Date	Page
1	DESIGN OF THERMALLY RESPONSIVE REVERSIBLE HYDROPHOBIC GELS	Prof.(Dr.) Sarat Kumar Swain et al.	378725 (India)	06/10/2021 (Granted)	01
2	APPARATUS FOR TESTING STRUCTURAL DAMAGE IN LAMINATED COMPOSITE PLATES	Dr. Pankaj Charan Jena, Dr. Sunita Sethy	Design No. 403182-001 (India)	27/12/2023 (Date of Grant: 22/03/2024)	03
3	APPARATUS AND METHOD FOR ASSESSING STRUCTURAL DAMAGE IN LAMINATED COMPOSITE PLATES	Dr. Pankaj Charan Jena, Dr. Sudhansu Ranjan Das, Prof. Debabrata Dhupal, Dr. Sunita Sethy	202331077544A (India)	17/11/2023	4
4	MILD STEEL PLUNGER CAPSULE	Dr. Sunita Sethy	Design No. 388719-001 (India)	(Date of Grant: 20/06/2023)	5
5	AN EXTRACTION PROCESS OF BORASSUS FLABELLIFER L. LEAF FIBER	Dr. Arun Kumar Rout	2023/02070 (South Africa)	31/05/2023	10
6	AI-IoT BASED CYLINDER TROLLEY SYSTEM AND THEREOF	Dr. Sudhansu Ranjan Das	202331011690A (India)	10/03/2023	11

7	EMPLOYING MULTI-ENERGY SOURCES TO HEATING THE WATER IN A THERMOS BOTTLE COMPRISING WITH POWER STORAGE SYSTEM	Dr. Sudhansu Ranjan Das	202121035368 (India)	27/08/2021 (Date of Grant: 22/12/2023)	12
8	FLUIDIZED HOT CHAMBER FOR ABRASIVE JET MACHINING	Prof. Debabrata Dhupal, Dr. Pankaj Charan Jena, Dr. Sudhansu Ranjan Das	202031053304A (India)	05/02/2021 (Date of Grant: 13/09/2022)	13
9	AN ALUMINUM HYBRID METAL MATRIX COMPOSITE AND METHOD OF PREPARATION THEREOF	Dr. Sudhansu Ranjan Das	2021104792 (Australia)	Date of Grant: 04/05/2022	14
10	A SMART AUTOMATIC TAP AND INDICATOR	Dr. Trupti Ranjan Mahapatra, Birendra Kumar Barik	202231003134 (India)	18/02/2022	16
11	A NOVEL SPRING DESIGN METHOD FOR VEHICULAR SUSPENSION SYSTEM	Dr. Trupti Ranjan Mahapatra	202131046126 (India)	12/11/2021	18
12	INSTANT ELECTRIC HEATING WATER FAUCET SYSTEM AND STRUCTURE	Dr. Sudhansu Ranjan Das, Dr. Smita Padhan	202121044569A (India)	12/11/2021 (Date of Grant: 28/02/2024)	20
13	IOT BASED ROAD CUTTER	Dr. Trupti Ranjan Mahapatra	349686-001 (India)	08/10/2021	21
14	AN AUTONOMOUS FLOOR CLEANING ROBOT	Dr. Pankaj Charan Jena	202131023229A (India)	18/06/2021	22
15	A NOVEL ALUMINUM METAL	Dr. Sudhansu Ranjan Das	202031044353A (India)	04/12/2020	23

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16	FLEXIBLE ELECTRODE HOLDER FOR MACHINING OF MICRO DRILL USING EDM MACHINE	Prof. Debabrata Dhupal	202031031392E (India)	22/07/2020 (Date of Grant: 02/03/2021)	24
17	Fire Extinguisher bracket and Roll Bar mount assembly	Dr. Santosh Kumar Sahu	349737001 (India)	19/09/2021	25
18	An aluminium hybrid Metal Matrix composite and method of preparation thereof	Dr. Santosh Kumar Sahu	2021104792 (Australia)	04/05/2022 (Granted)	26
19	Airbag device for two wheeler	Dr. Sumanta Panda	430611 (India)	06/02/2023 (Granted)	27
20	Solar Panel cleaning Robot for industrial solar plants	Dr. Santosh Kumar Sahu	362071-001 (India)	06/04/2022	28
21	Coconut tree climbing machine	Dr. Santosh Kumar Sahu	202315106 (India)	19/09/2023	29
22	Wireless Robotic hand	Dr. Santosh Kumar Sahu	6266653 (UK)	14/03/2023 (Granted)	30
23	Portable plastic recycling machine with fast crushing unit	Dr. Santosh Kumar Sahu	403026-001 (India)	24/12/2023	31
24	Wear Controlled Roller chain sprocket device for two-wheeler	Dr. Sumanta Panda	550736 (India)	10/03/2023	32
25	Vibration assisted fixture for workpiece in electrical discharge machining	Dr. Santosh Kumar Sahu	420278-001 (India)	16/06/2024	33
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28	A SYSTEM FOR A PROGRAMMABLE, TIMED, WIRELESS, ENERGY-HARVESTING SENSOR NODE UTILIZING LONG-RANGE RADIO ACCESS	Dr. Sasmita Behera Et Al.	202022105972 (Germany)	17/11/2022 (Granted)	36
29	ULTRASONIC SENSOR BASED GAS DENSITY MONITORING OF SF6 GAS INSULTED SWITCHGEAR	Dr. Gyan Ranjan Biswal Et Al.	504038 (India)	29/01/2024 (Granted)	37
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31	Internet of Things Apparatus For Detection & Monitor Operation Physical Parameter For Safe Manhole.	Mrs. Alina Dash Et Al.	2021101890 (Australia)	13/04/2021 (Granted)	39
32	Apparatus For Real Time Prisoner Monitoring & Alerting System Using IOT	Mrs. Alina Dash Et Al.	2021101932 (Australia)	14/05/2021 (Granted)	40
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36	SE –WHEELCHAIR: SMART ELECTRIC WHEELCHAIR	Dr. Bikramaditya Das Et Al.	201921005026 (India)	19/07/2019	44
37	ENERGY EFFICIENT MONITORING OF MENTALLY CHALLENGED PEOPLE USING WIRELESS SENSOR NETWORKS	Dr. Satyabrata Das	202031014831 (India)	5/15/2020	45
38	ADVANCED SELF-HEALING COMPOSITE MATERIALS FOR AEROSPACE STRUCTURAL COMPONENTS	Dr. Swagatika Mishra Et Al.	47/2024 (India)	22/11/2024	46
39	NOVEL SUPERPLASTICIZER IN REALIZING SELF-COMPACTING GEOPOLYMER CONCRETE AND METHOD OF PRODUCING THE SAME	Dr. Saubhagya Kumar Panigrahi	46/2024 (India)	15/11/2024	47
40	SOIL GEOPOLYMER USING RED MUD, GGBS AND PHOSPHOGYPSUM WITH RICE HUSK ASH BASED ACTIVATOR	Dr Debabrata Giri Et. Al.	42/2024 (India)	18/10/2024	48
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45	SOLVENT FREE GREEN SYNTHESIS OF ACRIDONE BASED DIHYDROPYRAZINE DERIVATIVES USING COPPER FERRITE NANOPARTICLES AS HETEROGENEOUS CATALYST	P. Lakshmi Praveen Et Al.	Application Number-202341051813 (India)	01/09/2023	53
46	EVALUATION OF HIGH VOLUME FLYASH CONCRETE FOR RIGID PAVEMENT OVERLAYS.	Mrs. Kajal Swain Et Al.	202331047873 (India)	13/10/2023	54

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48	SYSTEM AND METHOD FOR A HYBRID FUZZY PD-PI PLUS FUZZY P CONTROLLER FOR FREQUENCY REGULATION OF ELECTRICAL POWER SYSTEM	Prof. Siddhartha Panda	202321030883 (India)	02/06/2023	56
49	COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWORK	Mrs.Alina Dash Et Al.	202341013611 (India)	17/03/2023	57
50	A WINDMILL APPARATUS FOR GENERATING ELECTRIC POWER TO A GRID POINT OF AN ELECTRIC NETWORK BY USING DUMP LOAD AND POWER CONVERTER	Prof. Prakash Kumar Hota Et Al.	202331009143 (India)	17/02/2023	58
51	AN ADAPTIVE MULTI-OBJECTIVE MACHINE	Dr. Sanjib Kumar Nayak Et Al.	202241070444 (India)	09/12/2022	59

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53	AN ASSEMBLY FOR DESIGN ANALYSIS AND ALTERATIONS FOR MEDIUM SIZED ROCKET MOTOR TEST STAND	Prof. (Dr.) Debadutta Mishra Et Al.	202231061757 (India)	04/11/2022	61
54	A HYBRID AIRBORNE WIND TURBINE	Prof. (Dr.) Debadutta Mishra Et Al.	202231061758 (India)	04/11/2022	62
55	A SILO LAUNCHPAD ASSEMBLY FOR MODEL ROCKETRY	Prof. (Dr.) Debadutta Mishra Et Al.	202231061759 (India)	04/11/2022	63
56	VETIVER ROOT BASED SUSTAINABLE ECOFRIENDLY ELECTRO- ACOUSTIC STEALTH MATERIAL	Prof. Ganeswar Nath Et Al.	202231061185 (India)	04/11/2022	64
57	AN ARTIFICIAL INTELLIGENCE- BASED SPEECH ASSISTED COMPUTER OPERABLE	Prof. (Dr.) Manas R. Kabat	202231057698 (India)	21/10/2022	65

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59	AN EFFICIENT MULTICLASS CLASSIFIER FOR CLASSIFICATION OF ALZHEIMER'S DISEASE/MILD COGNITIVE IMPAIRMENT/NORMAL SUBJECTS	Prof. Sanjay Agrawal Et Al.	202231047543 (India)	09/12/2022	67
60	INTELLIGENT MOBILE CHARGER: AUTOMATIC DISCONNECT THE CHARGER IF YOUR MOBILE BATTERY CHARGE 97.5%.	Dr. Santosh Kumar Sahu (Assistant Professor) Et Al.	202141021762 (India)	06/08/2021	68
61	AN IOT-BASED HEALTH MONITORING SYSTEM AND EMERGENCY ALERT SYSTEM	Dr. Padipta Kumar Das Et Al.	202131013149 (India)	09/04/2021	69
62	LOT DRIVEN SMART PLUG FOR SPEED CONTROL OF HIGH CURRENT-RATED HOUSEHOLD APPLIANCES	Dr. Gyan Ranjan Biswal	202111011525 (India)	09/04/2021	70
63	A SYSTEM FOR COOLING A SPACE	Dr. Prasant Nanda	201931015508 (India)	17/05/2019	71
64	AN AUTOMATIC TUMOR DETECTION SYSTEM BASED ON LOCAL LINEAR	Dr. Manas Ranjan Senapati et. al.	2021103132 (Australia)	22/09/2021 (Granted)	72

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65	A NOVEL MULTI- LEVEL OPTIMIZATION FOR TASK SCHEDULING AND LOAD BALANCING IN CLOUD	Dr. Manas Ranjan Senapati et. al.	2021103249 (Australia)	08/09/2021 (Granted)	73
66	A SYSTEM FOR ESTIMATING THE FRACTAL DIMENSION OF IMAGES USING PIXEL RANGE CALCULATION TECHNIQUE	Dr. Manas Ranjan Senapati et. al.	2021102809 (Australia)	24/05/2021 (Granted)	74
67	Health Related Crisis Ready Plan through Wireless Sensor Network and the Cloud Computing at Populated Spots	Dr. SANTOSH KUMAR MAJHI	2021100341 (Australia)	31/03/2021 (Granted)	75
68	A SYSTEM AND METHOD FOR SCHEDULING TASK IN IOT-FOG-CLOUD CONTINUUM	Dr. SANTOSH KUMAR MAJHI	2021100648 (Australia)	31/03/2021 (Granted)	76
69	INTERNET OF THINGS APPARATUS FOR DETECTION & MONITOR OPERATION PHYSICAL PARAMETER FOR SAFE MANHOLE	Mrs. Alina Dash Et Al.	2021101890 (Australia)	19/05/2021 (Granted)	77
70	A SYSTEM FOR COUNTING PEOPLE IN A CROWD USING THE AUDIO WATERMARKING TECHNOLOGY	Mrs. Alina Dash Et Al.	202131025084 (INDIA)	09/07/2021	78
71	COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE SECURITY OPERATIONS USING EEG	Mrs. Alina Dash Et Al.	2023/04529 (SOUTH AFRICA)	17/10/2023	79

	DATA WITHIN IOT FRAMEWORK				
72	AUTONOMOUS BIOMETRIC AUTHENTICATION SYSTEM FOR ADVANCED SECURITY	Mrs. Alina Dash Et Al.	6379779 (UK)	06/09/2023 (Granted)	81



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एकस्व/PATENTS | अभिकल्प/DESIGNS |
व्यापार चिह्न/TRADE MARKS | भौगोलिक
उपदर्शन/GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार
GOVERNMENT OF INDIA**

एकस्व कार्यालय / THE PATENT OFFICE
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सं. \ No. 201631021775

दिनांक \ Dated the 06/10/2021

सेवा में, \ To :

Address of Service:- L.S DAVAR & COMPANY 32, RADHA MADHAV DUTTA GARDEN LANE KOLKATA 700010, WEST BENGAL PHONE: 91-33-23633251 FAX: 91-33-2363-3248 E-MAIL: lsdavar@cal2.vsnl.net.in
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विषय :- पेटेंट आवेदन संख्या 201631021775 के संबंध में अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर में प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 201631021775

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व ----- को हुई सुनवाई] के उपरान्त एतद्वारा पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 06/10/2021 को पेटेंट रजिस्टर में कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on -----] a patent is hereby granted and recorded in the Register of Patents on the 06/10/2021. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 378725
आवेदक का नाम \ Name Of Applicant	: 1.PROF.(Dr.) SARAT KUMAR SWAIN 2.DR. SK BASIRUDDIN 3.MS. KALYANI PRUDTY
पेटेंट दिनांक \ Date of Patent	: 24/06/2016
पूर्विका तिथि \ Priority Date	: 24/06/2016
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filing date of Request for examination	: 09/06/2020
शीर्षक \ Title	: DESIGN OF THERMALLY RESPONSIVE REVERSIBLE HYDROPHOBIC GELS
दावों की संख्या \ Number of claims	: 1-7, original claims

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल में किया जाएगा।

The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय में नवीकरण शुल्क जमा किया जाना चाहिए।

The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act, 1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Soumen Ghosh

(नियंत्रक पेटेंट)

Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वेबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।

For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in

2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।

No hard copy of Patent Certificate shall be issued separately by the office.



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सत्यमेव जयते

क्रमांक : 033117636
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. : 378725
आवेदन सं. / Application No. : 201631021775
फाइल करने की तारीख / Date of Filing : 24/06/2016
पेटेंटी / Patentee : 1.PROF.(Dr.) SARAT KUMAR SWAIN 2.DR. SK
BASIRUDDIN 3.MS. KALYANI PRUDTY

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित DESIGN OF THERMALLY RESPONSIVE REVERSIBLE HYDROPHOBIC GELS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 24th day of June 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 DESIGN OF THERMALLY RESPONSIVE REVERSIBLE HYDROPHOBIC GELS as disclosed in the above mentioned application for the term of 20 years from the 24th day of June 2016 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 06/10/2021
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 24th day of June 2018 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of June 2018 and on the same day in every year thereafter.



ORIGINAL

क्रम सं/ Serial No.: 161541



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 403182-001

तारीख / Date : 27/12/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **APPARATUS FOR TESTING STRUCTURAL DAMAGE IN LAMINATED COMPOSITE PLATES** से संबंधित है, का पंजीकरण, श्रेणी 10-05 में

1.Pankaj Charan Jena 2. Sarada Prasad Parida 3.Debasish Mishra 4.Sunita Sethy 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 10-05 in respect of the application of such design to **APPARATUS FOR TESTING STRUCTURAL DAMAGE IN LAMINATED COMPOSITE PLATES** in the name of 1.Pankaj Charan Jena 2. Sarada Prasad Parida 3.Debasish Mishra 4.Sunita Sethy.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधधीन 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 :
Date of Issue : 22/03/2024



कुलत की पंक्ति

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*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.

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202331077544 A

(19) INDIA

(22) Date of filing of Application :14/11/2023

(43) Publication Date : 17/11/2023

(54) Title of the invention : Apparatus and Method for Assessing Structural Damage in Laminated Composite Plates.

(51) International classification

:G01M0005000000, G01N0029040000, H04N0007180000, G01M0099000000, G01M0010000000

(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

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2)Sarada Prasad Parida**3)Debasish Mishra****4)Sunita Sethy**

Name of Applicant : NA

Address of Applicant : NA

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10)Ajit Kumar Khatua

Address of Applicant :Department of Mechanical Engineering, Templecity Institute of Technology and Engineering , Khordha, Bhubaneswar, Odisha, India, Pincode- 752050. -----

(57) Abstract :

ABSTRACT Apparatus and Method for Assessing Structural Damage in Laminated Composite Plates. The present invention relates to an Apparatus for Assessing Structural Damage in Laminated Composite Plates, designed for controlled experimentation in underwater conditions. The apparatus comprises a high-grade stainless steel water tank, a pressurized water pump, pressure and velocity measuring instruments, a stone feeder, and a test specimen mounted on an adjustable holder. A protective steel shield wall prevents direct impact on the tank, while a force sensor and high-resolution camera measure and document impact forces and damage initiation. A programmable computer with an image processing program analyzes data, enabling precise evaluation of Laminated Composite Plate structural integrity under simulated impact conditions.

No. of Pages : 21 No. of Claims : 5



ORIGINAL

क्रम सं/ Serial No.: 143519



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No.

388719-001

तारीख / Date

20/06/2023

पारस्परिकता तारीख / Reciprocity Date*

देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **MILD STEEL PLUNGER CAPSULE** से संबंधित है, का पंजीकरण, श्रेणी 08-05 में 1.Dr. Rajesh Kumar Behera 2. Dr. Bhabani Prasanna Pattanaik 3.Prof. Bibhuti Bhusan Rath 4.Dr. Kunja Bihari Sahu 5.Dr. Dillip Kumar Biswal 6.Dr. Bijaya Kumar Khamari 7.Dr. Birajendu Prasad Samal 8.Prof. Sunita Sethy 9.Dr. Priyadarsan Mahana 10.Prof. Amiya Kumar Nayak 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 08-05 in respect of the application of such design to **MILD STEEL PLUNGER CAPSULE** in the name of 1.Dr. Rajesh Kumar Behera 2. Dr. Bhabani Prasanna Pattanaik 3.Prof. Bibhuti Bhusan Rath 4.Dr. Kunja Bihari Sahu 5.Dr. Dillip Kumar Biswal 6.Dr. Bijaya Kumar Khamari 7.Dr. Birajendu Prasad Samal 8.Prof. Sunita Sethy 9.Dr. Priyadarsan Mahana 10.Prof. Amiya Kumar Nayak.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधधीन 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 : 06/09/2023
Date of Issue



महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*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.

REPRESENTATION SHEET

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Prof. Sunita Sethy,
Dr. Priyadarsan Mahana,
Er. Amiya Kumar Nayak,

Total sheets-04
Sheet No.-01


PERSPECTIVE VIEW

The novelty resides in the shape and configuration of the “Mild steel plunger capsule” as illustrated.

No claim is made by virtue of this registration in respect of any production or other action of the high machining performance in respect of any mode or principle of construction of the article.

No claim is made by virtue of this registration in respect of the use of the words, letters, Wire, Trade Mark, Colour combination and Extraneous matters appearing in the Photograph.

Dated this 20 day of June 2023

Ashok Sharma, Adv
Mitra & Associates
Applicant Agent's

REPRESENTATION SHEET

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Dr. Bijaya Kumar Khamari,
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Prof. Sunita Sethy,
Dr. Priyadarsan Mahana,
Er. Amiya Kumar Nayak,

Total sheets-04
Sheet No.-02


FRONT VIEW



BACK VIEW

The novelty resides in the shape and configuration of the “**Mild steel plunger capsule**” as illustrated.

No claim is made by virtue of this registration in respect of any production or other action of the high machining performance in respect of any mode or principle of construction of the article.

No claim is made by virtue of this registration in respect of the use of the words, letters, Wire, Trade Mark, Colour combination and Extraneous matters appearing in the Photograph.

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Name of Applicants:

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Prof. Sunita Sethy,
Dr. Priyadarsan Mahana,
Er. Amiya Kumar Nayak,

Total sheets-04
Sheet No.-03


**TOP VIEW
(BOTTOM VIEW CORRESPONDS)**

The novelty resides in the shape and configuration of the “Mild steel plunger capsule” as illustrated.

No claim is made by virtue of this registration in respect of any production or other action of the high machining performance in respect of any mode or principle of construction of the article.

No claim is made by virtue of this registration in respect of the use of the words, letters, Wire, Trade Mark, Colour combination and Extraneous matters appearing in the Photograph.

Ashok Sharma

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REPRESENTATION SHEET

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Dr. Birajendu Prasad Samal,
Prof. Sunita Sethy,
Dr. Priyadarsan Mahana,
Er. Amiya Kumar Nayak,

Total sheets-04
Sheet No.-04


**SIDE VIEW
(OTHER SIDE VIEW CORRESPONDS)**

The novelty resides in the shape and configuration of the “Mild steel plunger capsule” as illustrated.

No claim is made by virtue of this registration in respect of any production or other action of the high machining performance in respect of any mode or principle of construction of the article.

No claim is made by virtue of this registration in respect of the use of the words, letters, Wire, Trade Mark, Colour combination and Extraneous matters appearing in the Photograph.

Dated this 20 day of June 2023

Ashok Sharma, Adv
Mitra & Associates
Applicant Agent's

REPUBLIC OF SOUTH AFRICA



REPUBLIEK VAN SUID AFRIKA

PATENTS ACT, 1978

CERTIFICATE

In accordance with section 44 (1) of the Patents Act, No. 57 of 1978, it is hereby certified that:

SINGH, Jitesh Kumar; ROUT, Arun Kumar; KANHED, Satish Mohan

Has been granted a patent in respect of an invention described and claimed in complete specification deposited at the Patent Office under the number
2023/02070

A copy of the complete specification is annexed, together with the relevant Form P2.

In testimony thereof, the seal of the Patent Office has been affixed at Pretoria with effect from the **31st** day of **May 2023**


.....
Registrar of Patents

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202331011690 A

(19) INDIA

(22) Date of filing of Application :21/02/2023

(43) Publication Date : 10/03/2023

(54) Title of the invention : AI-IoT BASED CYLINDER TROLLEY SYSTEM AND THEREOF

(51) International classification :H04W 4/21
 (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

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(57) Abstract :
 AI-IoT BASED CYLINDER TROLLEY SYSTEM AND THEREOF This invention disclosed of live weight monitor of the gas cylinder utility and automatic booking process features comprised through artificial intelligence (AI)- Internet of Things (IoT)-based sensor and mobile app. To design, configuration, and utilization of AI-IoT based smart trolley system is comprised of a novel trolley (1), swivelling castor wheels (2), foldable wheels section (3), measuring load cell (4), cylinder support holding base (5), printed circuit board (6), LCD screen (7), ON/OFF switch (8), 5-volt battery (9), a tiny buzzer (10), aurdino kit (11), data processors (12), sensors (13), memory card (14), amplifier (15), Wi-Fi-hotspot (16), user interface (17), mobile app (18). The design model has been trained to monitor the performance of the embedded electronic circuit of the trolley and information is stored in attached memory on it. The memory and sensors are operationally connected to one or more processors to perform the proper functioning of the entire process. The processor is implanted to gather information on the live weight of the gas cylinder as measured by the sensor; input the data into the AI model; and then optimize the AI model response to the input data through a mobile app. However, the AI-IoT model has combined a smart feature to track daily gas (LPG, CNG & Oxygen, etc.) usage and also numerous appropriate applications based on a configured smart trolley system. Simultaneously, it is sensing the live weight data and alerts the user via an alarm system, when the gas utilization reached the user's feed. A mobile app interface system will have the necessary information for gas distributors or dealers will be included in the app database or manually can be added. Hereafter a developed AI-IoT mechanism will be sent a notification to the users for completion of the automatic/manual online booking process or aware alarm of gas utility status.

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202121035368 A

(19) INDIA

(22) Date of filing of Application :05/08/2021

(43) Publication Date : 27/08/2021

(54) Title of the invention : EMPLOYING MULTI-ENERGY SOURCES TO HEATING THE WATER IN A THERMOS BOTTLE COMPRISING WITH POWER STORAGE SYSTEM

(51) International classification :A47J0041000000, A47J0041020000, H02J0007350000, A47G0023040000, A61J0009000000	(71) Name of Applicant : 1)DR. DIPEN KUMAR RAJAK Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Sandip Institute of Technology and Research Centre, Nashik 422213, Maharashtra, India Maharashtra India
(31) Priority Document No	(72) Name of Inventor :
(32) Priority Date	1)Dr. DIPEN KUMAR RAJAK
(33) Name of priority country	2)Dr. ASHWINI KUMAR
(86) International Application No	3)Dr. ARUNA KUMAR BEHURA
Filing Date	4)Dr. ANSHUMAN DAS
(87) International Publication No	5)Dr. SUDHANSU RANJAN DAS
(61) Patent of Addition to Application Number	6)Dr. ASHISH AGRAWAL
Filing Date	7)Mr. PARIMAL ANIL PATIL
(62) Divisional to Application Number	8)DR. SURESH KASWAN
Filing Date	

(57) Abstract :

EMPLOYING MULTI-ENERGY SOURCES TO HEATING THE WATER IN A THERMOS BOTTLE COMPRISING WITH POWER STORAGE SYSTEM The current scenario is increasing demands to use warm water for drinking purposes while traveling and working place, especially in the winter season. However, the thermos bottle, which is now widely used for carrying warm water for indoor and outdoor works. Consequently, a better option is to opt for a thermos bottle to keep the warm water and it has been seen that might behold up to 24 hours of warm water. Indeed, the thermos bottle is constructed in such a manner as double-walled stainless steel and mixed glass composites and so on, with a vacuum in the space between the two walls. In this current invention is revealed the novel approaches are used for making thermos bottle and their unique fabrications method for comprising with power storage system (PSS). Although, for heating the water (the heating temperature of warm water will be seen through the digital display) is using multi-energy sources such as AC power source, and using an embedded system like PSS, which will be charged by solar strip (SS) is arranged on the periphery of the thermos bottle and also could be AC power source. Moreover, the SS will be charging the PSS and PSS can be useful for cell phone and electronics compatible lamp or LED based lamp through C-type port and may more uses. A novel thermos bottle has useful benefit as follows: water in the thermos bottle will be heated by AC power, and PSS; thermos bottle is simple in structure, energy-saving, excellent thermal insulating, handy, convenient, environment-friendly, and low in price.

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



INTELLECTUAL
PROPERTY INDIA

PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA

पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 of The Patents Rules)

क्रमांक : 033121422
SL No :



पेटेंट सं. / Patent No. : 406529
आवेदन सं. / Application No. : 202031053304
फाइल करने की तारीख / Date of Filing : 08/12/2020
पेटेंटी / Patentee : 1.DHUPAL, Debabrata 2.KUMARI, Kanchan 3.PRADHAN,
Subhadip 4.DAS, Sudhansu Ranjan et al. et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित FLUIDIZED HOT CHAMBER FOR ABRASIVE JET MACHINING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 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 FLUIDIZED HOT CHAMBER FOR ABRASIVE JET MACHINING as disclosed in the above mentioned application for the term of 20 years from the 8th day of December 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 13/09/2022
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2022 के आठवें दिन को और उसके पश्चात प्रत्येक वर्ष में 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 December 2022 and on the same day in every year thereafter.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021104792

The Commissioner of Patents has granted the above patent on 4 May 2022, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

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Ayusman Behera of Student, Kendriya Vidyalaya No.1, Bhoi Nagar, Unit-9 Bhubaneswar Odisha 751022 India

Birajendu Samal of Associate Professor, Department of Mechanical Engineering, Orissa Engineering College Bhubaneswar Odisha 751007 India

Kamalakanta Muduli of Associate Professor, Department of Mechanical Engineering, Papua New Guinea University of Technology Lae Morobe Province 411 Papua New Guinea

Title of invention:

An Aluminum Hybrid Metal Matrix Composite And Method Of Preparation Thereof

Name of inventor(s):

Behera, Rajesh; Behera, Ayusman; Samal, Birajendu; Muduli, Kamalakanta; Panigrahi, Sarat Chandra; Muhammad, Noorhafiza Binti; Das, Sudhansu Ranjan; Das, Anshuman; Rath, Debabrata; S., Karthi; Sahu, Santosh Kumar; Mishra, Bishnu Prasad; Parida, Arun Kumar and Samal, Ananya

Term of Patent:

Eight years from 2 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.



Dated this 4th day of May 2022

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.



Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India

(<http://ipindia.nic.in/index.htm>)



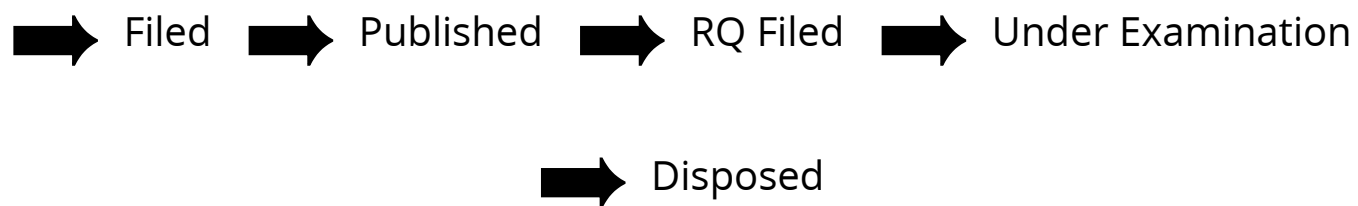
(<http://ipindia.nic.in/index.htm>)

Application Details

APPLICATION NUMBER	202231003134
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	19/01/2022
APPLICANT NAME	1 . Mr. Nitesh Kumar Kabi 2 . Prof. Ramesh Chandra Panda 3 . Lt Birendra Kumar Barik 4 . Dr. Trupti Ranjan Mahapatra 5 . Dr. Sanjukta Sahoo 6 . Dr. Debadutta Mishra 7 . Dr. Sushanta Tripathy 8 . Mr. Dilip Kumar Sahu 9 . Ms. Sushmita Dash 10 . Mr. Sidharth Patro
TITLE OF INVENTION	A SMART AUTOMATIC TAP AND INDICATOR
FIELD OF INVENTION	CIVIL
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ADDITIONAL-EMAIL (As Per Record)	chandra.amrish@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	18/02/2022

Application Status

APPLICATION STATUS	Awaiting Request for Examination
--------------------	---

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In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in



Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India

(<http://ipindia.nic.in/index.htm>)

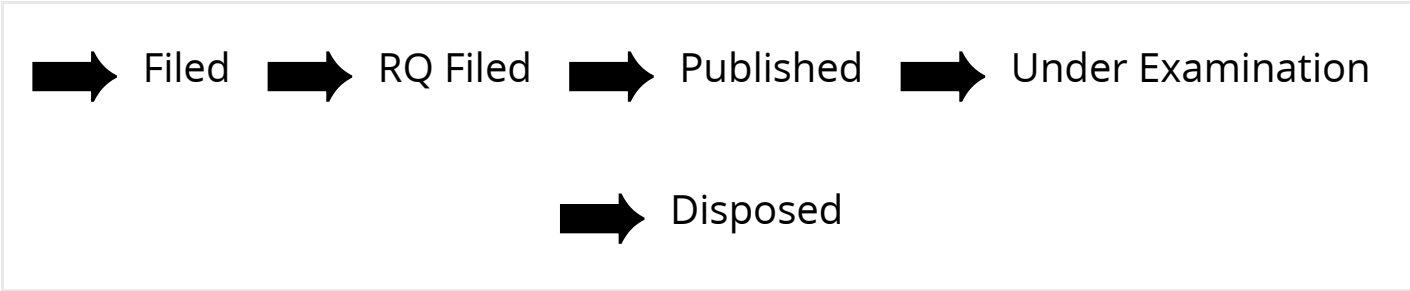


(<http://ipindia.nic.in/index.htm>)

Application Details	
APPLICATION NUMBER	202131046126
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/10/2021
APPLICANT NAME	1 . Mr. Dilip Kumar Sahu 2 . Mr. Janmenjay Dandsena 3 . Dr. Debadutta Mishra 4 . Dr. Trupti Ranjan Mahapatra 5 . Dr. Sushanta Tripathy 6 . Ms. Sushmita Dash 7 . Dr. Akshaya Kumar Rout 8 . Prof.Ramesh Chandra Panda
TITLE OF INVENTION	A NOVEL SPRING DESIGN METHOD FOR VEHICULAR SUSPENSION SYSTEM
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	ramesh.panda.mech@gmail.com
ADDITIONAL-EMAIL (As Per Record)	ramesh.panda.mech@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	11/10/2021
PUBLICATION DATE (U/S 11A)	12/11/2021

Application Status	
APPLICATION STATUS	FER Issued, Reply not Filed

			<div>View Documents</div>
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In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202121044569 A

(19) INDIA

(22) Date of filing of Application :01/10/2021

(43) Publication Date : 12/11/2021

(54) Title of the invention : INSTANT ELECTRIC HEATING WATER FAUCET SYSTEM AND STRUCTURE

(51) International classification :F24H0009200000, F16K0049000000, A47J0031540000, F24H0001100000, A47J0031000000
 (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. DIPEN KUMAR RAJAK
 Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, G. H. RAISONI INSTITUTE OF BUSINESS MANAGEMENT, JALGAON- 425002, MAHARASHTRA -----
Name of Applicant : NA
Address of Applicant : NA
 (72)Name of Inventor :
1)Dr. DIPEN KUMAR RAJAK
 Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, G. H. RAISONI INSTITUTE OF BUSINESS MANAGEMENT, JALGAON 425002, MAHARASHTRA ----
2)Dr. ASHWINI KUMAR
 Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY, GURUGRAM 122505, HARYANA ---
3)Dr. ARUNA KUMAR BEHURA
 Address of Applicant :ASSISTANT PROFESSOR, SCHOOL OF MECHANICAL ENGINEERING, VIT UNIVERSITY, VELLORE 632014, TAMILNADU -----
4)Dr. SUDHANSU RANJAN DAS
 Address of Applicant :ASSOCIATE PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA 768081, ODISHA -----
5)Dr. ANSHUMAN DAS
 Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, DIT UNIVERSITY, DEHRADUN 248009, UTTARAKHAND -----
6)Dr. ASHISH AGRAWAL
 Address of Applicant :ASSISTANT PROFESSOR, DEPARTMENT OF MECHANICAL ENGINEERING, MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR 474005, MADHYA PRADESH -
7)Mrs. SMITA PADHAN
 Address of Applicant :ASSISTANT PROFESSOR, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA 768018, ODISHA, INDIA -----
8)Mr. PARIMAL ANIL PATIL
 Address of Applicant :FLAT NO.9 AISHWARYA SANKUL, OPPO VIKHE PATIL MEMORIAL SCHOOL, DGP NAGAR 2, AMBAD, NASHIK 422010, MAHARASHTRA -----
9)Mr. SHUBHAM SANJAY HENGADE
 Address of Applicant :1023, HENGADE MALA, MATORI ROAD, A/P. MAKHAMALABAD, NASHIK 422003, MAHARASHTRA -----

(57) Abstract :
 INSTANT ELECTRIC HEATING WATER FAUCET SYSTEM AND STRUCTURE The utility model discloses an instant heating, in particular to an instant heating water faucet system which comprises a comprising with (1) main shell body, (2) induction coil, (3) flow convergent section, (4) flow divergent section, (5) top cover, (6) bottom cover, (7) heating tubes, (8) temperature controller, (9) flow sensor, (10) NTC transistor, (11) transistor cover, (12) fasteners, (13) central control unit, (14) connectors, (15) power supply, (16) faucet system. The utility model discloses an instant heating water faucet, comprising a housing, an electric heating device arranged in a chamber of the housing with a main control circuit unit connected to the electric heating device, wherein a novel fabrication process of utility model is comprising with above mentioned components. The instant heating water faucet is simple in structure, convenient for mounting and long in service life, and has high popularization value.

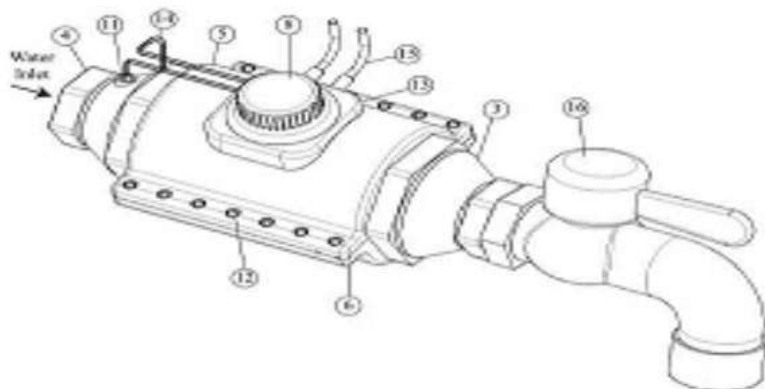


Figure 1: Isometric view of instant heating system

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



Controller General of Patents, Designs and Trademarks
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry

Design Application Details

Application Number:

349686-001

Cbr Number:

207646

Cbr Date:

17/09/2021 19:18:37

Applicant Name:

- | | | |
|-------------------------------|---------------------------|--------------------------------|
| 1. Dr. Debadutta Mishra | 2. Dr. Indradeep Verma | 3. Dr. K. Rama Krishna |
| 4. Ajay Kumar Gupta | 5. Dr Pratibha chaturvedi | 6. Dr. Trupti Ranjan Mahapatra |
| 7. Dr. Vijay Jagdish Upadhye | 8. Dr. Papiya Debnath | |
| 9. Prof. Ramesh Chandra Panda | 10. Dr P Karthigeyan | |

Design Application Status

Application Status:

Design Accepted and Published, Journal No is 49/2023 and Journal Date is 08/12/2023

[Back \(/DesignApplicationStatus/\)](#)

Disclaimer: Application status is available for the application filed on or after 1st April 2009 with application no 222230. The information under "Design Application Status" is dynamically retrieved and is under testing, therefore the information retrieved by this system is not valid for any legal proceedings under the Design Act 2000. In case of any discrepancy you may contact the appropriate Patent Office or send your comments to following email IDs:

Design Office, Kolkata : controllerdesign.ipo@nic.in

Controller General of Patents, Designs and Trademarks

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202131023229 A

(19) INDIA

(22) Date of filing of Application :25/05/2021

(43) Publication Date : 18/06/2021

(54) Title of the invention : AN AUTONOMOUS FLOOR CLEANING ROBOT DEEMED TO BE UNIVERSITY, AN INSTITUTE OF EMINENCE,

(51) International classification	:A47L0011400000, G05D0001020000, A47L0009280000, A47L0011280000, B63B0059100000	(71)Name of Applicant : 1)Dr. ANISH PANDEY Address of Applicant :School of Mechanical Engineering, Campus-8 Kalinga Institute of Industrial Technology (KIIT) Deemed to be University, An Institute of Eminence, Bhubaneswar-751024, India Orissa India
(31) Priority Document No	:NA	2)Dr. ASHWANI KUMAR
(32) Priority Date	:NA	3)Dr. RUBY MISHRA
(33) Name of priority country	:NA	4)Mr. SURJEET SINGH
(86) International Application No	:NA	(72)Name of Inventor :
Filing Date	:NA	1)Dr. Anish Pandey
(87) International Publication No	: NA	2)Dr. Pankaj Charan Jena
(61) Patent of Addition to Application	:NA	3)Mr. Surjeet Singh
Number	:NA	4)Dr. Ashwani Kumar
Filing Date	:NA	5)Dr. Ruby Mishra
(62) Divisional to Application Number	:NA	6)Dr. Dayal R. Parhi
Filing Date	:NA	7)Mr. Abhishek Kumar Kashyap
		8)Mr. Prince Kumar

(57) Abstract :

ABSTRACT AN AUTONOMOUS FLOOR CLEANING ROBOT An autonomous floor cleaning robot(1) is disclosed that comprises, a chassis, a locomotion system, a dry cleaning unit(4), a wet cleaning unit(5), a hot air drier(6). The chassis(2) comprises a circular base plate(21); power system(22), on board electronics(23), sensors(24), micro controller(25), motor drivers(26) and a casing(27). The locomotion system(3) is mounted below the base plate(21), comprises a caster wheel(31) and two independently driven powered wheels(32a, 32b). Waste particles and dusts are accumulated onto the central portion below the base plate by sweeping action of rectangular broom belts(41a, 41b), which are subsequently sucked in to a collection box(45) by vacuum action. The wet cleaning unit(5) consist of rectangular mopping belts(51,52,53) that are fed water by dripping action. The rectangular belts(41a,41b, 51, 52,53) remain parallel to the floor surface, thereby providing maximum contact area when compared with roller type cleaning heads which provide line contact. Moreover the belt tension due to being driven by a motor contributes to contact pressure, thereby increasing the efficiency of cleaning. The said robot(1) further comprises a hot air drier(6) after the wet cleaning unit(5). The robot(1) is capable of environmental mapping, determining a path and navigating along determined path while dynamic obstacle detection and avoidance during operation. At the end of operation the said autonomous floor cleaning robot(1) renders a clean and dry floor without any human intervention without any extra waiting time post the cleaning operation.

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

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202031044353 A

(19) INDIA

(22) Date of filing of Application :12/10/2020

(43) Publication Date : 04/12/2020

(54) Title of the invention : A NOVEL ALUMINUM METAL MATRIX COMPOSITE PRODUCED BY POWDER METALLURGY METHOD

<p>(51) International classification :B22F3/10</p> <p>(31) Priority Document No :NA</p> <p>(32) Priority Date :NA</p> <p>(33) Name of priority country :NA</p> <p>(86) International Application No :NA</p> <p>Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA</p> <p>Filing Date :NA</p> <p>(62) Divisional to Application Number :NA</p> <p>Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)BEHERA, ER. Rajesh, Kumar</p> <p>Address of Applicant :Ph.D. Research scholar & Assistant Professor, Department of Mechanical Engineering, Orissa Engineering College, Bhubaneswar, Odisha with permanent address of At-Balisiria, P.O.-Jaleswarpada, Via-Bangurigan, P.S.-Kakatpur, Dist.-Puri, Odisha</p> <p>2)SAMAL, Dr. Birajendu, Prasad</p> <p>(72)Name of Inventor :</p> <p>1)PANIGRAHI, Dr. Sarat, Chandra</p> <p>2)SAMAL, Ananya</p> <p>3)MUDULI, Dr. Kamala, Kanta</p> <p>4)BEHERA, ER. Rajesh, Kumar</p> <p>5)MOHAMED, Dr. Aezeden</p> <p>6)SAMAL, Dr. Birajendu, Prasad</p> <p>7)DAS, Dr. Sudhansu, Ranjan</p>
--	---

(57) Abstract :

A reinforced aluminium metal matrix composite, consisting essentially of a matrix metal comprising aluminium as principle matrix metal; and a plurality of inter-metallic particles, the inter-metallic particles having a size ranging from 149 microns to about 44 microns and being dispersed within the metal matrix in an amount ranging from 10% by weight to about 20% by weight, wherein said matrix material combined with the reinforced materials of copper, magnesium, silicon and silicon carbide as inter-metallic reinforcing particles.

No. of Pages : 17 No. of Claims : 10



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GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रमांक : 033114824
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. : 360058
आवेदन सं. / Application No. : 202031031392
फाइल करने की तारीख / Date of Filing : 22/07/2020
पेटेंटी / Patentee : 1.DHUPAL, Debabrata 2.KUMARI, Kanchan 3.NAYAK, Sujit Kumar 4.SHARMA, Vijaya

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित FLEXIBLE TOOL HOLDER FOR MACHINING MICRO-FEATURES USING ELECTRIC DISCHARGE MACHINES नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 22nd day of July 2020 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 FLEXIBLE TOOL HOLDER FOR MACHINING MICRO-FEATURES USING ELECTRIC DISCHARGE MACHINES as disclosed in the above mentioned application for the term of 20 years from the 22nd day of July 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/03/2021
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 22nd day of July 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22nd day of July 2022 and on the same day in every year thereafter.



ORIGINAL

मूल/No : 123494



भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
डिजाइन के पंजीकरण का प्रमाणपत्र
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No. : 349737-001
तारीख / Date : 19/09/2021
पारस्परिकता तारीख / Reciprocity Date* :
देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **FIRE EXTINGUISHER BRACKET AND ROLL BAR MOUNT ASSEMBLY** से संबंधित है, का पंजीकरण, श्रेणी **29-01** में 1.Dr. Santosh Kumar Sahu 2. Mr. Diptiranjana Panda 3.Mr. Chitta Ranjan Sethi 4.Ms. Kalyani Lohar 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 **29-01** in respect of the application of such design to **FIRE EXTINGUISHER BRACKET AND ROLL BAR MOUNT ASSEMBLY** in the name of 1.Dr. Santosh Kumar Sahu 2. Mr. Diptiranjana Panda 3.Mr. Chitta Ranjan Sethi 4.Ms. Kalyani Lohar.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसरण में।

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

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PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

निर्गमन की तारीख/Date of Issue : 04/01/2023

महानियंत्रक पेटेंट डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति देश के नाम पर की गई है। डिजाइन का सत्वाधिकार 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021104792

The Commissioner of Patents has granted the above patent on 4 May 2022, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Rajesh Behera of Ph.D. Research Scholar, Biju Patnaik University of Technology Rourkela Odisha 769004 India

Ayusman Behera of Student, Kendriya Vidyalaya No.1, Bhoi Nagar, Unit-9 Bhubaneswar Odisha 751022 India

Birajendu Samal of Associate Professor, Department of Mechanical Engineering, Orissa Engineering College Bhubaneswar Odisha 751007 India

Kamalakanta Muduli of Associate Professor, Department of Mechanical Engineering, Papua New Guinea University of Technology Lae Morobe Province 411 Papua New Guinea

Title of invention:

An Aluminum Hybrid Metal Matrix Composite And Method Of Preparation Thereof

Name of inventor(s):

Behera, Rajesh; Behera, Ayusman; Samal, Birajendu; Muduli, Kamalakanta; Panigrahi, Sarat Chandra; Muhammad, Noorhafiza Binti; Das, Sudhansu Ranjan; Das, Anshuman; Rath, Debabrata; S., Karthi; Sahu, Santosh Kumar; Mishra, Bishnu Prasad; Parida, Arun Kumar and Samal, Ananya

Term of Patent:

Eight years from 2 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.



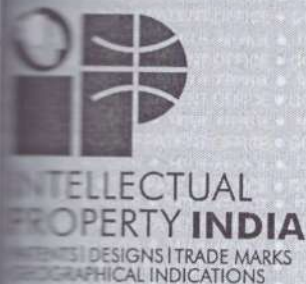
Dated this 4th day of May 2022

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

This data, for application number 2021104792, is current as of 2022-10-04 21:00 AEST



क्रमांक : 033123091
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. : 420611
आवेदन सं. / Application No. : 202231032031
फाइल करने की तारीख / Date of Filing : 04/06/2022
पेटेंटी / Patentee : 1.Mrs. Ipsita Dash 2.Dr. Debabrata Rath 3.Dr. Sumanta Panda

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित Airbag device for Two wheeler नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2022 के चौथे 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 Airbag device for Two wheeler as disclosed in the above mentioned application for the term of 20 years from the 4th day of June 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/02/2023
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2024 के चौथे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4th day of June 2024 and on the same day in every year thereafter.



ORIGINAL

No. 117271

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No. 362071-001
Date 06/04/2022
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 15-05 in respect of the application of such design to SOLAR PANEL CLEANING ROBOT FOR INDUSTRIAL SOLAR POWER PLANTS in the name of 1.MR NAGABHOOSHANAM, ADITYA ENGINEERING COLLEGE(A), ADITYA NAGAR, A D B ROAD, SURAMPALEM - 533 437, EAST GODAVARI DIST, ANDHRA PRADESH, INDIA. 2. DR. ANUJ KUMAR SHARMA, ASSOCIATE PROFESSOR, CIVIL ENGINEERING DEPARTMENT, RAMDEOBABA COLLEGE OF ENGINEERING AND MANAGEMENT NAGPUR-13 3. DR SAI RAM INKOLLU, DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING DHANEKULA INSTITUTE OF ENGINEERING & TECHNOLOGY GANGURU, VIJAYAWADA, ANDHRA PRADESH-521139 4. DR. SANTOSH KUMAR SAHU, DR. SANTOSH KUMAR SAHU, DEPARTMENT OF MECHANICAL ENGINEERING, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA, SAMBALPUR, ODISHA.768018.

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

INTENT TO REGISTER
PROPERTY IN INDIA

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 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

SAURABH KUMAR JAIN,
SENANIP, P-440, DELTA-1, GREATER NOIDA, UP
201310 INDIA.

Date of Issue 27/09/2022 16:43:42



Australian Government

IP Australia

CERTIFICATE OF REGISTRATION DESIGN

Design number: 202315106

The Registrar of Designs has registered the design represented on this certificate and certifies that the following particulars have been entered in the Register of Designs.

Name and address of owner(s):

Dr. Santosh Kumar Sahu of Department of Mechanical Engineering Veer Surendra Sai University of Technology,
Burla Sambalpur Odisha 768018 India

Product to which the design is registered:

Coconut Tree Climbing Machine

Name of designer(s):

Dr. Santosh Kumar Sahu

Date of filing:

4 August 2023

Date of registration:

19 September 2023

Term of initial registration:

Five years commencing on 4 August 2023

Statement of newness and distinctiveness:

NOTE: This Design Registration cannot be enforced unless and until it has been examined by the Registrar of Designs and a Certificate of Examination has been issued. See sections 73(3) and 77(3) of the Designs Act 2003, set out on the reverse of this document.



Dated this 19th day of September 2023

Registrar of Designs

DESIGNS ACT 2003

The Australian Designs Register is the official record and should be referred to for the full details pertaining to this IP Right.



Intellectual
Property
Office

Certificate of Registration for a UK Design

Design number: 6266653

Grant date: 14 March 2023

Registration date: 07 March 2023

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Santosh Kumar Sahu

in respect of the application of such design to:

Wireless Robotic Hand

International Design Classification:

Version: 14-2023

Class: 24 MEDICAL AND LABORATORY EQUIPMENT

Subclass: 03 PROSTHETIC ARTICLES

Adam Williams

Comptroller-General of Patents, Designs and Trade Marks

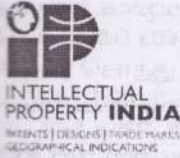
Intellectual Property Office

The attention of the Proprietor(s) is drawn to the important notes overleaf.



Intellectual Property Office is an operating name of the Patent Office

www.gov.uk/ipa



ORIGINAL
क्रम सं/ Serial No. : 168741



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No. : 403026-001

तारीख / Date : 24/12/2023

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **PORTABLE PLASTIC RECYCLING MACHINE WITH FAST CRUSHING UNIT** से संबंधित है, का पंजीकरण, श्रेणी 15-09 में 1.Dr. Y.Sujatha 2. Dr. Katam Ganesh Babu 3.Dr. Santosh Kumar Sahu 4.Dr. Priyadarshi Tapas Ranjan Swain 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 15-09 in respect of the application of such design to **PORTABLE PLASTIC RECYCLING MACHINE WITH FAST CRUSHING UNIT** in the name of 1.Dr. Y.Sujatha 2. Dr. Katam Ganesh Babu 3.Dr. Santosh Kumar Sahu 4.Dr. Priyadarshi Tapas Ranjan Swain.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसरण में।

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

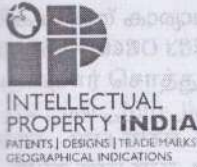
जारी करने की तिथि :
Date of Issue : 10/05/2024



उत्पाद की पंजीय
महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*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.



क्रम सं/SL No :033137112



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.

550736

आवेदन सं. / Application No.

202331016239

फाइल करने की तारीख / Date of Filing

10/03/2023

पेटेंटी / Patentee

1.Mrs. Ipsita Dash 2.Dr. Debabrata Rath 3.Dr. Sumanta Panda

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **WEAR CONTROLLED ROLLER CHAIN SPROKET DEVICE FOR TWO WHEELER** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के दसवें 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 **WEAR CONTROLLED ROLLER CHAIN SPROKET DEVICE FOR TWO WHEELER** as disclosed in the above mentioned application for the term of 20 years from the 10th day of March 2023 in accordance with the provisions of the Patents Act, 1970.

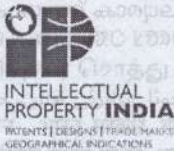


अनुदान की तारीख : 23/09/2024
Date of Grant :

डॉ. नीलेश्वर
पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2025 के दसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10th day of March 2025 and on the same day in every year thereafter.



ORIGINAL
क्रम सं/ Serial No. : 178754



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No.

420278-001

तारीख / Date

16/06/2024

पारस्परिकता तारीख / Reciprocity Date*

देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **VIBRATION ASSISTED FIXTURE FOR WORKPIECE IN ELECTRICAL DISCHARGE MACHINING** से संबंधित है, का पंजीकरण, श्रेणी 15-09 में 1.Mr. Diptiranjan Panda 2. Dr. Santosh Kumar Sahu 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 15-09 in respect of the application of such design to **VIBRATION ASSISTED FIXTURE FOR WORKPIECE IN ELECTRICAL DISCHARGE MACHINING** in the name of 1.Mr. Diptiranjan Panda 2. Dr. Santosh Kumar Sahu.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अधधीन 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 :

Date of Issue : 23/08/2024



महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न

Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वत्वधिकार 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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WIPO/OMPI DESIGN MARKS
REGISTRATION INDICATIONS



सत्यमेव जयते

ORIGINAL

क्रम सं/Serial No. : 171786



पेटेंट कार्यालय, भारत सरकार

The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र

Certificate of Registration of Design

डिजाइन सं. / Design No.

383315-001

तारीख / Date

07/04/2023

पारस्परिकता तारीख / Reciprocity Date*

देश / Country

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **ARTIFICIAL INTELLIGENCE EMPOWERED SOLAR VEHICLE** से संबंधित है, का पंजीकरण, श्रेणी 12-13 में 1.Ms. Sima Das 2. Dr.Tanmay Kumar Behera 3.Ms. Camellia Ray 4.Prof.Rabindranath Sahu 5.Dr.Prangya Parimita Pradhan 6.Prof.Subhrashree Pritichhanda 7.Dr.Aditi Chatterjee 8.Dr.Sasmita Behera 9.Dr.Nimay Chandra Giri 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 12-13 in respect of the application of such design to **ARTIFICIAL INTELLIGENCE EMPOWERED SOLAR VEHICLE** in the name of 1.Ms. Sima Das 2. Dr.Tanmay Kumar Behera 3.Ms. Camellia Ray 4.Prof.Rabindranath Sahu 5.Dr.Prangya Parimita Pradhan 6.Prof.Subhrashree Pritichhanda 7.Dr.Aditi Chatterjee 8.Dr.Sasmita Behera 9.Dr.Nimay Chandra Giri.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन 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:

Date of Issue 05/06/2024



कुलत जी सिंह

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

*पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति दी गई है तथा देश का नाम। डिजाइन का स्वतः अधिकार 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 कार्यावाहियों 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.



ORIGINAL

मूल/No : 135884



भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
डिजाइन के पंजीकरण का प्रमाणपत्र
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No. : 379893-001
तारीख / Date : 22/02/2023
पारस्परिकता तारीख / Reciprocity Date* :
देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो **RENEWABLE ENERGY POWERED POLES TO DETECT NOISE POLLUTION** से संबंधित है, का पंजीकरण, श्रेणी 10-05 में 1.Dr.Saine Sikta Dash 2. Dr.Sasmita Behera 3.Prof.Saswat Mishra 4.Dr.Siba Prasad Mishra 5.Prof. Deepak Kumar Sahu 6.Dr.Jyoti Prakash Giri 7.Dr.Prangya Parimita Pradhan 8.Prof.Priyanka Mishra 9.Prof.Nimay Chandra Giri 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 10-05 in respect of the application of such design to **RENEWABLE ENERGY POWERED POLES TO DETECT NOISE POLLUTION** in the name of 1.Dr.Saine Sikta Dash 2. Dr.Sasmita Behera 3.Prof.Saswat Mishra 4.Dr.Siba Prasad Mishra 5.Prof. Deepak Kumar Sahu 6.Dr.Jyoti Prakash Giri 7.Dr.Prangya Parimita Pradhan 8.Prof.Priyanka Mishra 9.Prof.Nimay Chandra Giri.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसरण में।

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

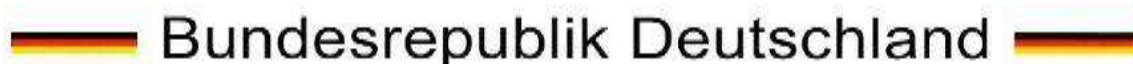
INTELLECTUAL
PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

निर्गमन की तारीख/Date of Issue : 17/05/2023

महानियंत्रक पेटेंट डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks

पारस्परिकता तारीख (यदि कोई हो) जिसकी अनुमति देश के नाम पर की गई है। डिजाइन का सत्वाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के निर्बंधनों 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.



Bundesrepublik Deutschland

Urkunde

über die Eintragung des
Gebrauchsmusters Nr. 20 2022 105 972

Bezeichnung:

Ein System für einen programmierbaren, zeitgesteuerten, drahtlosen Sensor-Knoten mit Energiegewinnung, der einen Funkzugang mit großer Reichweite nutzt

IPC:

H04W 52/00

Inhaber/Inhaberin:

Bajaj, Mohit, Dr., Roorkee, Uttarakhand, IN
 Behera, Sasmita, Dr., Burla, Odisha, IN
 Giri, Nimay Chandra, Prof., Jatni, Odisha, IN
 Mehta, Shilpa, Dr., Tigiria, Odisha, IN
 Mishra, Prasheet, Bhubaneswar, Odisha, IN
 Panda, Ramesh Chandra, Dr., Bhubaneswar, Odisha, IN
 Paul, Kaushik, Dr., Sindri, Jharkhand, IN
 Routray, Sangram Kishore, Prof., Jatni, Odisha, IN
 Sengar, Namrata, Dr., Kota, Rajasthan, IN

Tag der Anmeldung:

22.10.2022

Tag der Eintragung:

17.11.2022

Die Präsidentin des Deutschen Patent- und Markenamts

Cornelia Rudloff-Schäffer

Cornelia Rudloff-Schäffer

München, 17.11.2022



Die Voraussetzungen der Schutzfähigkeit werden bei der Eintragung eines Gebrauchsmusters nicht geprüft.
 Den aktuellen Rechtsstand und Schutzzumfang entnehmen Sie bitte dem DPMAregister unter www.dpma.de.



क्रम सं/SL No.:011194970



पेटेंट कार्यालय, भारत सरकार पेटेंट प्रमाण पत्र

The Patent Office, Government Of India Patent Certificate

(पेटेंट नियमावली का नियम 74)

(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.

504038

आवेदन सं. / Application No.

202111011524

फाइल करने की तारीख / Date of Filing

18/03/2021

पेटेंटी / Patentee

1.Dr. GYAN RANJAN BISWAL 2.Dr. TARIKUL ISLAM 3.Dr. VENKATESWARA RAO M

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **ULTRASONIC SENSOR BASED GAS DENSITY MONITORING OF SF6 GAS INSULATED SWITCHGEAR** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2021 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 **ULTRASONIC SENSOR BASED GAS DENSITY MONITORING OF SF6 GAS INSULATED SWITCHGEAR** as disclosed in the above mentioned application for the term of 20 years from the 18th day of March 2021 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख
Date of Grant : 29/01/2024



पेटेंट नियंत्रक
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2023 के अठारहवें दिन को और उसके पश्चात प्रत्येक वर्ष में 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 March 2023 and on the same day in every year thereafter.



REPUBLIC OF SOUTH AFRICA

REPUBLIEK VAN SUID AFRIKA

PATENTS ACT, 1978

CERTIFICATE

In accordance with section 44 (1) of the Patents Act, No. 57 of 1978, it is hereby certified that:

**NARENDRA KUMAR ROUT; NIRJHARINEE PARIDA; SARTHAK PANDA;
ADYASHA RATH; HARISH KUMAR SAHOO; GANAPATI PANDA**

Has been granted a patent in respect of an invention described and claimed in complete specification deposited at the Patent Office under the number

2022/04044

A copy of the complete specification is annexed, together with the relevant Form P2.

In testimony thereof, the seal of the Patent Office has been affixed at Pretoria with effect from the **29th day of June 2022**

.....
Registrar of Patents





Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021101890

The Commissioner of Patents has granted the above patent on 19 May 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Biswaranjan Acharya of School of Computer Engineering, KIIT Deemed to be University, Odisha Odisha 751024 India

Sandhya Makkar of Sr. Assistant Professor, (Operations & Systems), Lal Bahadur Shastri Inst. of Management Delhi, India

Ipseeta Nanda of Associate Professor, Faculty in Information Technology, Gopal Narayan Singh University Jamhuar, Bihar, India

Alina Dash of Assistant Professor, Department of CSE, VSSUT Burla, Odisha, India

Puja Das of Computer Science Department, Hiralal Mazumder Memo. College for Women Kolkata, India

Asik Rahaman Jamader of Dept. of Tourism and Hotel Management, Penguin School of Hotel Management Kolkata, India

Mahendra Prasad Nath of Dept. of Computer Science & Engineering, Siksha 'O' Anusandhan, Deemed to be University Bhubaneswar, Odisha, India

Sidhartha Sekhar Dash of Assistant Professor-II, School of Law, KIIT University Bhubaneswar, Odisha, India

Sarvesh Kumar Shahi of Assistant Professor-I, School of Law, KIIT University Bhubaneswar, Odisha, India

Title of invention:

INTERNET OF THINGS APPARATUS FOR DETECTION & MONITOR OPERATION PHYSICAL PARAMETER FOR SAFE MANHOLE

Name of inventor(s):

Acharya, Biswaranjan; Makkar, Sandhya; Nanda, Ipseeta; Dash, Alina; Das, Puja; Jamader, Asik Rahaman; Nath, Mahendra Prasad; Dash, Sidhartha Sekhar and Shahi, Sarvesh Kumar

Term of Patent:

Eight years from 13 April 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.



Dated this 19th day of May 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021101932

The Commissioner of Patents has granted the above patent on 19 May 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Biswaranjan Acharya of School of Computer Engineering, KIIT Deemed to be University, Odisha Odisha 751024 India

Sandhya Makkar of Sr.Assistant Professor, and Area Chair(Operations and Analytics), Lal Bahadur Shastri Inst. of Management Delhi, India

Hemlata Sharma of Lecturer, Department of Digital Analytics, and Technology Sheffield Hallam University S1 1WB United Kingdom

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Puja Das of Computer Science Department, Hiralal Mazumder Memo. College for Women Kolkata, India

Asik Rahaman Jamader of Dept. of Tourism and Hotel Management, Penguin School of Hotel Management Kolkata, India

Title of invention:

APPARATUS FOR REAL TIME PRISONER MONITORING & ALERTING SYSTEM USING IOT

Name of inventor(s):

Acharya, Biswaranjan; Makkar, Sandhya; Sharma, Hemlata; Nanda, Ipseeta; Dash, Alina; Das, Sudhansu Bala; Khan, Nikhat Raza; Imam, Haru; Das, Puja and Jamader, Asik Rahaman

Term of Patent:

Eight years from 14 April 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.



Dated this 19th day of May 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021104312

The Commissioner of Patents has granted the above patent on 6 April 2022, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

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Alina Dash of Assistant Professor, Department of CSE, VSSUT Burla Odisha 768018 India

Asik Rahaman Jamader of Dept. of Tourism & Hotel Management, Penguin School of Hotel Management Kolkata West Bengal 700059 India

Title of invention:

SMART COVID-19 TESTING BOOTH AUTOMATION SYSTEM

Name of inventor(s):

Acharya, Biswaranjan; Patel, Deepak Kumar; Subudhi, Sharmila; Dash, Alina and Jamader, Asik Rahaman

Term of Patent:

Eight years from 19 July 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.



Dated this 6th day of April 2022

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.

— Bundesrepublik Deutschland —

Urkunde

über die Eintragung des
Gebrauchsmusters Nr. 20 2022 102 516

Bezeichnung:

Gerät zur Erkennung von falschem Geld mittels intelligenter Schaltung und Bildverarbeitung

IPC:

G07D 7/12

Inhaber/Inhaberin:

Acharya, Biswaranjan, Jajpur, Odisha, IN
Dash, Alina, Sambalpur, Odisha, IN
Kuanr, Madhushree, Bhubaneswar, Odisha, IN
Patra, Tapas Kumar, Dr., Bhubaneswar, Odisha, IN
Pradhan, Manas Ranjan, Dr., Sharjah, AE
Mohapatra, Puspanjali, Dr., Bhubaneswar, Odisha, IN
Subudhi, Sharmila, Dr., Bhubaneswar, Odisha, IN

Tag der Anmeldung:

07.05.2022

Tag der Eintragung:

01.06.2022

Die Präsidentin des Deutschen Patent- und Markenamts

Cornelia Rudloff-Schäffer

Cornelia Rudloff-Schäffer

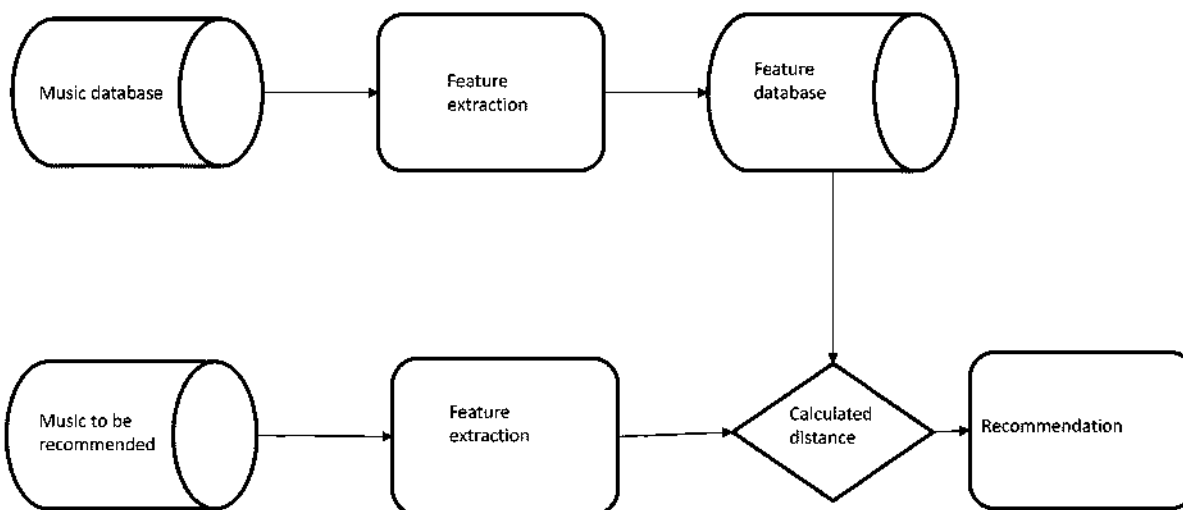
München, 01.06.2022



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Den aktuellen Rechtsstand und Schutzzumfang entnehmen Sie bitte dem DPMAregister unter www.dpma.de.

(19) **United States**(12) **Patent Application Publication**
Navimipour et al.(10) **Pub. No.: US 2023/0153350 A1**(43) **Pub. Date: May 18, 2023**(54) **MUSIC RECOMMENDATION SYSTEM BY
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(TR); **Seyed-Sajad Ahmadpour**,
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Bangalore (IN); **L.K. Abhilashi**, Mandi
(IN); **Parinidhi Singh**, Navi Mumbai
(IN); **Reena Singh**, Pune (IN); **Pawan
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Telangana (IN); **Ratiranjan Senapati**,
Bangalore (IN); **L.K. Abhilashi**, Mandi
(IN); **Parinidhi Singh**, Navi Mumbai
(IN); **Reena Singh**, Pune (IN); **Pawan
Kumar Singh**, Navi Mumbai (IN);
B.K. Sarkar, Pune (IN)(21) Appl. No.: **18/157,419**(22) Filed: **Jan. 20, 2023****Publication Classification**(51) **Int. CL**
G06F 16/635 (2006.01)
G10L 25/63 (2006.01)**G10L 25/30** (2006.01)**G10L 21/0272** (2006.01)**G10H 1/00** (2006.01)**G06F 16/65** (2006.01)(52) **U.S. CL.****CPC** **G06F 16/636** (2019.01); **G10L 25/63**
(2013.01); **G10L 25/30** (2013.01); **G10L**
21/0272 (2013.01); **G10H 1/0008** (2013.01);
G06F 16/65 (2019.01); **G10H 2210/031**
(2013.01); **G10H 2250/311** (2013.01)(57) **ABSTRACT**

The system comprises an input device for collecting sound and sound information or extracting sound information from a music sample; a pre-processor for pre-processing the informational collection to generate an input information test set for a characterization model, wherein the pre-processor utilizes fine-grained division and different techniques to preprocess the example informational collection; a central processor for combining sound feeling data and further developing arrangement speed, such that review makes fine-grained division for genuine music informational collection and results the inclination results by casting a ballot direction, which is configured to promote precision of music feeling grouping; a vocal division device for dividing vocal of the complicated structure of genuine music sound, and voice and foundation sound are incorporated together; and a reviewing device for reviewing the vocal detachment of music and reviewing the grouping impact of vocal and foundation sound individually, which incredibly builds the convergence of sound elements.





Controller General of Patents, Designs and Trademarks
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry

Application Details

APPLICATION NUMBER	201921005026
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	08/02/2019
APPLICANT NAME	1 . BIKRAMADITYA DAS 2 . MADHUSMITA PANDA 3 . BIBHUTI BHUSAN PATI 4 . SAGARIKA MAHAPATRA 5 . SATYAJIT MAHAPATRA 6 . MANYATA MUGDHA PATTANAİK
TITLE OF INVENTION	SE-WHEELCHAIR: SMART ELECTRIC WHEELCHAIR.
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	
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E-MAIL (UPDATED Online)	dr.bksarkar2003@gmail.com
PRIORITY DATE	NA
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	19/07/2019

Application Status

APPLICATION STATUS

Application Published

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Patent Search

Invention Title	ENERGY EFFICIENT MONITORING OF MENTALLY CHALLENGED PEOPLE USING WIRELESS SENSOR NETWORKS
Publication Number	20/2020
Publication Date	15/05/2020
Publication Type	INA
Application Number	202031014831
Application Filing Date	03/04/2020
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMPUTER SCIENCE
Classification (IPC)	G06Q0030020000,G09B0019000000,A61B0005000000,G08B0021040000,G06N0003000000

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Patent Search

Invention Title	ADVANCED SELF-HEALING COMPOSITE MATERIALS FOR AEROSPACE STRUCTURAL COMPONENTS
Publication Number	47/2024
Publication Date	22/11/2024
Publication Type	INA
Application Number	202431088601
Application Filing Date	15/11/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	POLYMER TECHNOLOGY
Classification (IPC)	C08J0005040000, B32B0005020000, B32B0027400000, C08L0063000000, C08G0018760000

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Patent Search

Invention Title	NOVEL SUPERPLASTICIZER IN REALIZING SELF-COMPACTING GEOPOLYMER CONCRETE AND METHOD OF PRODUCING THE SAME
Publication Number	46/2024
Publication Date	15/11/2024
Publication Type	INA
Application Number	202431085262
Application Filing Date	06/11/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C04B0028000000, C04B0111000000, C04B0103320000, C04B0028080000, C04B0018240000

Inventor

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Applicant

Name	Address	Country
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Abstract:

This invention discloses a novel, cement-less, ambient cured self-compacting geopolymer concrete production method with a superior cost-effective superplasticizer, through agricultural waste like rice husk, even unprocessed, justifying its field applicability, proceeding towards a sustainable concrete creation. The derivation of the superplasticizer involves the dissolution of unprocessed rice husk in an aqueous sodium hydroxide solution followed by boiling and filtration. This alternate superplasticizer is then utilized to develop an SCGC system suitable for structural applications, incorporating ground granulated blast furnace slag collected from TATA Steel Limited, sodium alkaline activators, and natural aggregates. The developed rice husk-derived superplasticizer-based workable SCGC demonstrates superior compressive strength when compared to conventional SCGCs under room temperature conditions than other SCGCs with commercially available superplasticizers. Additionally, it provides an enhanced durability characteristic. Furthermore, the developed SCGC is not only eco-friendly but also economical compared to conventional cement-based/geopolymer concrete. Figure. 1.

Complete Specification

Description: FIELD OF INVENTION

[0001] The present invention pertains to the creation of an innovative superplasticizer derived from agricultural waste and an alkaline solution aimed at producing a novel self-compacting geopolymer concrete utilizing industrial waste materials.

BACKGROUND OF INVENTION

[0002] Concrete is the most extensively used construction material worldwide. Its popularity stems from substantive load-bearing capacity, durability, versatility, low maintenance requirements, availability, and affordability. Ordinary Portland Cement (OPC) is a key component of conventional concrete. Unfortunately, cement production needs a huge amount of energy and releases a massive greenhouse gas into the atmosphere. One ton of OPC manufacture consumes around 80 kWh of energy and emits 0.94 tons of CO₂ to the environment (Priya et al. 2024). India produced 370 million metric tons of cement in 2022, around 9% of the total global cement yield (cycles Text 2023), posing a crippling environmental situation. Additionally, the enormous industrial waste generation leads to severe environmental issues, such as air, water, and soil pollution, affecting adversely the ecosystems and human health (Krishnan et al. 2021). In this context, geopolymer concrete (GPC) has emerged as a sustainable alternative through industrial waste incorporation as a binding material, eliminating the need for cement. Despite these environmental advantages, GPC faces challenges owing to its large viscosity, hindering its global employment. To address this issue, self-compacting geopolymer concrete (SCGC) has been developed, amalgamating the benefits of GPC with the self-compacting characteristics, needed for the placement.

[0003] SCGC primarily consists of binders derived from industrial or agricultural waste, alkaline activators, aggregates, superplasticizers, and additional water. The self-compacting characteristics are primarily influenced by the superplasticizer dosage and additional water content, with the superplasticizer dosage being the most critical factor.

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Patent Search

Invention Title	SOIL GEOPOLYMER USING RED MUD, GGBS AND PHOSPHOGYPSUM WITH RICE HUSK ASH BASED ACTIVATOR
Publication Number	42/2024
Publication Date	18/10/2024
Publication Type	INA
Application Number	202431076620
Application Filing Date	09/10/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CIVIL
Classification (IPC)	C04B28/00, C04B12/02, C04B14/04

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Sandipta Choudhury	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
Sahin Ahmed	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
Dr Debabrata Giri	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
Mrs. Kajal Swain	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
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Applicant

Name	Address	Country	I
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Sandipta Choudhury	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
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Mrs. Kajal Swain	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I
Dr. Sanghamitra Jena	Department of Civil Engineering Veer Surendra Sai University of Technology, Burla, Odisha, India-768018	India	I

Abstract:

ABSTRACT OF THE INVENION Geopolymer is an emerging type of binding material that serves as an alternative to traditional ones and is typically activated by comme sodium- or potassium-based alkalis using industrial solid by-products as its primary ingredients. This research focused on evaluating the strength and durability of a (ground granulated blast furnace slag-red mud-phosphogypsum)-based soil-geopolymer with an alternate alkali solution derived from rice husk ash (RHA). The study peak compressive strength of 14.32 MPa after 28 days of wet curing, which significantly exceeds the minimum strength requirements for backfill, cementitious base and clay liner materials as specified by Indian standards. The findings highlighted that calcium oxide (CaO) was crucial for enhancing both the strength and structural during weathering. Moreover, an 8-molar (M) concentration of NaOH proved more effective than a 12-molar (M) concentration due to its lower residual alkali content performed better in a medium-alkaline environment.

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Patent Search

Invention Title	ANTENNA ARRAY SYSTEM FOR KU BAND APPLICATION
Publication Number	10/2024
Publication Date	08/03/2024
Publication Type	INA
Application Number	202431011545
Application Filing Date	19/02/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	H01Q0003260000, H01Q0021060000, H04L0001000000, H01Q0021280000, H04B0007185000

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Abstract:

ABSTRACT The current disclosure presents an antenna array system tailored for Ku-band applications. It features an of antennas, each with optimized physical length data, ensuring the efficient reception and transmission of Ku-band frequency signals. A filter mechanism is seamlessly integrated into the system to process incoming signals while effectively mitigating signal interference. Furthermore, the system incorporates two radiating elements, precisely configured to emit the processed Ku-b frequency signals received from the filter mechanism. This innovative antenna array system offers a solution for Ku-band communication challenges, improving signa minimizing interference. It has wide-ranging applications in satellite communication, radar systems, and other critical domains where reliable Ku-band communicatio imperative, promising enhanced performance and signal fidelity.

[Complete Specification](#)

Description:

ANTENNA ARRAY SYSTEM FOR KU BAND APPLICATION

TECHNICAL FIELD

[0001] The disclosure relates to communication systems, specifically to an integrated antenna-filter design for improving efficiency and minimizing signal interfer communication devices operating in Ku-band.

BACKGROUND

[0002] In the domain of communication systems, antennas play a pivotal role in the transmission and reception of signals. The efficiency of a communication svst

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Invention Title	RICE HUSK ASH DERIVED CEMENT-LESS ALKALI-ACTIVATED BINDER SYSTEM FOR STRUCTURAL APPLICATIONS
Publication Number	09/2024
Publication Date	01/03/2024
Publication Type	INA
Application Number	202431009932
Application Filing Date	13/02/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C04B18/04, C04B18/06, C04B18/08, C04B28/06, C04B28/08, C04B7/14

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Abstract:

This invention discloses a method and composition for the synthesis of a high-strength, cement-less alkali-activated binder system for structural applications. An alternate alkaline activator, derived from rice husk ash (RHA), is employed in the process. The derivation of the alternate alkali activator involves the dissolution of RHA in an aqueous sodium hydroxide solution at room temperature and pressure. This alternate alkali activator is then utilized to develop a binder system suitable for structural applications incorporating class F-type fly ash obtained from a thermal power plant, ground granulated blast furnace slag, and natural river sand. The developed binder demonstrates compressive strength when cured under room temperature conditions. Furthermore, the developed alkali-activated binder system is not only eco-friendly but also eco-compared to conventional cement-based/alkali-activated binder systems.

Complete Specification

Description: RICE HUSK ASH DERIVED CEMENT-LESS ALKALI-ACTIVATED BINDER SYSTEM FOR STRUCTURAL APPLICATIONS

FIELD OF INVENTION

The present invention is related to the development of a cement-less binder for structural applications, using industrial waste and alkaline activator.

BACKGROUND OF INVENTION

The emission of carbon dioxide gas from traditional cement, a significant contributor, has necessitated the search for sustainable alternatives. In this regard, alkali-activated materials, which have the potential to completely eliminate the need for cement, emerge as a promising solution. Unlike conventional cement, alkali-activated materials use readily available industrial and agricultural byproducts like fly ash, slag, rice husk ash, and meta-kaolin, etc., as sources of amorphous silicon and aluminum. In the presence of an alkaline activator solution, these sources dissolve and subsequently polymerize into molecular chains leading to the formation of binders. Unlike cement, the source materials of alkali-activated binders are waste materials due to which its production does not have a more adverse impact on the environment; it solves its disposal problem and is available at a very nominal price. However, one of the major obstacles to its widespread adoption remains the cost and carbon footprint associated with commercial alkaline activators.

The alkaline activator plays a pivotal role in the alkali-activated concrete's strength development. Solutions containing MOH and M₂O.rSiO₂ provide the essential "M K" component to activate aluminum and silicon from the source materials and complete the polymerization process. M₂O.rSiO₂ offers soluble silica to promote rapid polymerization, leading to denser, stronger structures with lower permeability, and NaOH has shown significantly faster Si and Al dissolution compared to KOH. No blend of sodium-based silicate and hydroxide is the most common activator used for the production of alkali-activated materials.

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Patent Search

Invention Title	METHOD AND COMPOSITION OF RICE HUSK ASH DERIVED ALKALI ACTIVATOR BASED CEMENT FREE GEOPOLYMER COMPOSITE
Publication Number	42/2023
Publication Date	20/10/2023
Publication Type	INA
Application Number	202331066940
Application Filing Date	05/10/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C04B0028000000, C04B0012000000, C04B0111000000, C04B0018020000, C04B0018140000

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Abstract:

This invention discloses a method and composition for synthesis of high strength and durable geopolymer composites with rice-husk-ash alkali-activator, wherein, the geopolymer composites are developed using an alternative alkaline activator. The alternative alkali activator is derived using a combination of aqueous sodium hydroxide solution and rice husk ash. This invention further includes 15-20 parts of coal fly ash, 15-20 parts of blast furnace slag and natural aggregates along with the said alkali activator. The developed geopolymer composites displays good compressive strength along with high durability indicators both in acid and sulphate environments. Furthermore, the method of geopolymer composite production is both eco-friendly and economic as compared to the conventional cement based/geopolymer composites.

Complete Specification

Description:METHOD AND COMPOSITION OF RICE HUSK ASH DERIVED ALKALI ACTIVATOR BASED CEMENT FREE GEOPOLYMER COMPOSITE
 FIELD OF INVENTION

The present disclosure relates to the field of geopolymer composite, in specific the rice husk ash (RHA) and a sodium hydroxide (SH) aqueous solution is employed to create the alkaline activator derived to produce geopolymer composite and a method of preparing thereof.

BACKGROUND OF INVENTION

Geopolymers are composite materials characterized by a polymer network formed through the bonding of silicon and aluminum atoms with oxygen. The synthesis of geopolymers involves dissolution and poly-condensation reactions, typically between an aluminosilicate binder and an alkaline silicate solution. This solution often comprises a blend of alkali metal silicate and metal hydroxide.

Over time, various additives and modifiers have been devised for conventional cement-based concrete formulations, allowing them to exhibit specific attributes such as accelerated curing and enhanced strength. Nevertheless, it is worth noting that, in many instances, geopolymers may not be suitable for industrial applications due to their high cost for the used alkali activators.

Typically, the most commonly employed alkaline activator for the synthesis of geopolymer products consists of a blend of sodium-based silicate and hydroxide. This is attributed to its widespread accessibility and excellent reactivity. Nonetheless, there have been relatively few instances of innovation in altering the alkaline activator composition. One notable example involves the substitution of sodium hydroxide with sodium carbonate, combined with sodium silicate, to create geopolymer composites as documented in the patent WO2014075134A1.

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Patent Search

Invention Title	KINETICS, ISOTHERM AND THERMODYNAMIC PARAMETER EVALUATION OF ADSORPTION OF METHYLENE BLUE ON GROUNDNUT SHEL
Publication Number	42/2023
Publication Date	20/10/2023
Publication Type	INA
Application Number	202331056335
Application Filing Date	22/08/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C02F0001280000, C02F0101300000, B01J0020240000, A61B0005000000, C02F0103300000

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Abstract:

ABSTRACT KINETICS, ISOTHERM AND THERMODYNAMIC PARAMETER EVALUATION OF ADSORPTION OF METHYLENE BLUE ON GROUNDNUT SHELLS The aim of this research is to prepare powder of arachis hypogaea available in local agricultural fields. They have exceptional mechanical properties, highly chemical stability and large specific surface area. So the powder has attracted researchers' interest as a type of adsorbent and offer an attractive option for the removal of organic and inorganic contaminants from wastewater. In the present work, arachis hypogaea was selected as an adsorbent to remove methylene blue from aqueous solution. Methylene blue (MB) is the most commonly used synthetic dye in dyeing cotton, wood and silk. It causes several harmful effects like increased heart rate, nausea, vomiting, shock, cyanosis, jaundice, and quadriplegia and tissue necrosis in humans. The main objective of this research was to evaluate the adsorption aptitude of arachis hypogaea for the removal of methylene blue as a model compound for wastewater treatment. The effects of pH, contact time, initial dye concentration and dosage on adsorption capacity were investigated. Moreover, kinetic and isotherm models were used to fit the experimental data determined.

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Invention Title	SOLVENT FREE GREEN SYNTHESIS OF ACRIDONE BASED DIHYDROPYRAZINE DERIVATIVES USING COPPER FERRITE NANOPARTICLES AS HETEROGENEOUS CATALYST
Publication Number	35/2023
Publication Date	01/09/2023
Publication Type	INA
Application Number	202341051813
Application Filing Date	02/08/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C07D0219060000, A61P0035000000, C07D0219080000, C09B0015000000, C07D0219100000

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Abstract:

Acridone based heterocycles have attracted the attention of the scientific community as these are one of the most important structural moieties in the domains of pharmaceutical chemistry due to their broad biological actions. Because of their planar structure, acridones can more easily form complexes with DNA and RNA chains and with nucleotides more readily, making them effective anticancer agents. In this connection, we have introduced an efficient solvent free protocol for the synthesis of acridone based dihydropyrazine derivatives using reusable CuFe₂O₄ magnetic nanoparticles as a heterogeneous catalyst.

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Invention Title	EVALUATION OF HIGH VOLUME FLYASH CONCRETE FOR RIGID PAVEMENT OVERLAYS.
Publication Number	41/2023
Publication Date	13/10/2023
Publication Type	INA
Application Number	202331047873
Application Filing Date	16/07/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C04B0018080000, C04B0111000000, E01C0007140000, C04B0018240000, C04B0033135000

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Dr. Reena Singh	GEH Research LLP India	India

Abstract:

ABSTRACT [001] Our Invention "Evaluation of High Volume Flyash Concrete for Rigid Pavement Overlays" to adhere to the objective of zero waste, this article concent optimisation of the C40 fly ash concrete pavement, which was thought of as a strategy to expedite the consumption of industrial solid wastes like fly ash. The perform as mechanical characteristics, durability, and brittle property) of the optimised mix percentage were assessed using a variety of mechanical and physical tests by com three groups of regular mix proportions. Barrett, Joyner, and Halenda's (BJH) technique, which determines pore size, was used to analyse the structure of their air spa findings were paired with concrete's performance on roads to examine the mechanism underlying the very durable fly ash pavement concrete's design. According to findings for the optimised, the 28 d compressive strength of the material reached a maximum of 50.8 MPa, and the 28 d flexural strength reached a maximum of 8.2 which showed that the material had a good mechanical performance for widespread use in pavement construction. A more compact pore structure was also supplie optimised due to the improved durability indicators that were acquired after optimisation, in addition to the mechanical characteristics. The two types of pavements' methods and raw components were contrasted. Promoting the usage of concrete made from optimised fly ash pavement can end the asphalt pavement's monopoly duty highways and significantly reduce the amount of industrial wastes, including fly ash and blast furnace slag, that can be utilised as raw materials to make cement established that, if the identical working performance goals are met, optimised fly ash concrete pavement may be utilised in place of asphalt pavement.

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Patent Search

Invention Title	DEVELOPMENT OF GEOPOLYMER MORTAR USING ALTERNATE ALKALI ACVITIVATOR PREPARED FROM BLENDED RICE HUSK ASH AND SL BAGASSE ASH
Publication Number	40/2023
Publication Date	06/10/2023
Publication Type	INA
Application Number	202331046728
Application Filing Date	12/07/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	CHEMICAL
Classification (IPC)	C04B 12/04, C04B 18/02, C04B 18/08, C04B 26/00, C04B 28/08

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Abstract:

In terms of carbon dioxide emissions into the environment, geopolimer binders can be competitive alternatives to traditional portland cement. But in order to take a this benefit, activators must be used, which is not the case with commercial goods like sodium hydroxide or sodium silicate. In addition to a brief discussion of the co activators, this study compares the mechanical of alternate alkali activator derived from agricultural wastes like rice-husk ash and sugarcane bagasse ash. The preser investigates the utilization of these agricultural waste ash in the production of alternate alkali activated mortar as a sustainable alternative to traditional cement-base

Complete Specification

Description:- Sodium silicate synthesis from RHA and SCBA

Initially RHA & SCBA is collected from agricultural industries. Once the bagasse or rice husk is burnt (at a temperature ranging from 600 to 900 ?), the ash left behind generally used for dumping. When RHA/SCBA ash is unprocessed, it is usually not in good form and contains large particles and lumps. As a result, this ash is ground compressed, and turned into a combination that may be utilised to produce concretes for the construction sector. If utilised for alkali activated cement preparation ash is organic in nature and environmentally friendly.

RHA & SCBA collected for this work has high silica content and low alumina content. The specific gravity of RHA and SCBA is 2.27 and 2.13 respectively. Both types o were properly grounded and sieved using IS standards 90-micron sieve. In this experiment, alkali solution was synthesized using different concentrations of NaOH s namely 10M, 12M, and 14M.

First, NaOH pellets were dissolved into distilled water to prepare the different molarities of NaOH solution. E.g., 480 grams of NaOH pellets were dissolved into 100L of distilled water to produce 12M NaOH solution. As the process is an exothermic one, it was allowed to be cooled down to the room temperature.

Then, combination of agricultural waste materials as RHA and SCBA were gently added to the NaOH solution in a ratio of 1:2 (agricultural waste to NaOH solution by to ensure complete reaction. In this process three combinations of agricultural wastes were incorporated viz. ratio between RHA & SCBA was kept at 1:1, 1:2 and 2:1 240 grams of agricultural waste with a blend proportion of 1:1 corresponds to a combination of RHA and SCBA (120 grams of RHA +120 grams of SCBA) along with 4 grams of prepared 12M NaOH solution. The mixture was then left for 2 hours at room temperature to cool down.

The mixture was then stirred at a temperature of 80? using a magnetic stirrer with hot plate under reflux conditions for 1 hour to facilitate the dissolution of silica fr

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Invention Title	SYSTEM AND METHOD FOR A HYBRID FUZZY PD-PI PLUS FUZZY P CONTROLLER FOR FREQUENCY REGULATION OF ELECTRICAL POWER
Publication Number	22/2023
Publication Date	02/06/2023
Publication Type	INA
Application Number	202321030883
Application Filing Date	29/04/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	B60W 100600, G05B 130200, G06N 070200, H02J 030000, H04L 472400

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Siddhartha Panda	Q. No. M4R/2, VSSUT Campus, Burla	India	India

Abstract:

For the dependable, safe, and stable operation of electric systems, frequency should be regulated continuously employing appropriate intelligent controllers. Hence, proposes a hybrid Fuzzy PD-PI plus Fuzzy P (hFPD-PI+FP) controller for frequency regulation of power system. The objective of this paper is to investigate the effective proposed hFPD-PI+FP controller in a standard power system and compare its performance with some established frequency control approaches available in literature. non-reheat type two-area thermal system is taken and the improvement of the suggested approach over the Bacteria Foraging Optimization Algorithm (BFOA), Teach Based Optimization (TLBO), Jaya Algorithm (JA), Genetic Algorithm (GA) and Hybrid BFOA and Particle Swarm Optimization Algorithm (hBFOA-PSO) for the identical test system has been demonstrated.

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Patent Search

Invention Title	COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWOF
Publication Number	11/2023
Publication Date	17/03/2023
Publication Type	INA
Application Number	202341013611
Application Filing Date	28/02/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	BIO-MEDICAL ENGINEERING
Classification (IPC)	A61B 050000, A61B 053690, A61B 053740, G06F 216200, H04L 671200

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Patent Search

Invention Title	A WINDMILL APPARATUS FOR GENERATING ELECTRIC POWER TO A GRID POINT OF AN ELECTRIC NETWORK BY USING DUMP LOAD AND CONVERTER
Publication Number	07/2023
Publication Date	17/02/2023
Publication Type	INA
Application Number	202331009143
Application Filing Date	11/02/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRICAL
Classification (IPC)	H02J0003380000, H02J0003180000, H02H0007060000, F03D0009250000, H02J0003320000

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Abstract:

ABSTRACT A WINDMILL APPARATUS FOR GENERATING ELECTRIC POWER TO A GRID POINT OF AN ELECTRIC NETWORK BY USING DUMP LOAD AND POWER CONVERTER mill apparatus for generating electric power to a grid point of an electric network. The apparatus includes a wind rotor, an electric generator operatively connected to rotor, and an electric multiphase ac link operatively connecting the generator to the grid point. The ac link includes a first current path including a switchgear, a second path including a dc link including a first converter operatively connected to the generator, a second converter operatively connected to the grid point, and a capacitor connected between the conductors of the dc link. The ac link further includes a connectable multiphase dump load for blocking during a fault condition on the network reactive power flow in the ac link, yet providing a reduced transfer of active power.

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Patent Search

Invention Title	AN ADAPTIVE MULTI-OBJECTIVE MACHINE LEARNING FRAMEWORK FOR EDGE COMPUTING BASED ON A MULTIPLE GRADIENT DESCEN
Publication Number	49/2022
Publication Date	09/12/2022
Publication Type	INA
Application Number	202241070444
Application Filing Date	06/12/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMPUTER SCIENCE
Classification (IPC)	G06N0020000000, G16H0050300000, G06N0005000000, G09B0019020000, G09B0007020000

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Patent Search

Invention Title	PREDICTION OF MALICIOUS COMMUNICATION IN VEHICULAR ADHOC NETWORK USING ARTIFICIAL INTELLIGENCE TECHNIQUE
Publication Number	46/2022
Publication Date	18/11/2022
Publication Type	INA
Application Number	202231065594
Application Filing Date	16/11/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	H04L0043026000, G08G0001010000, H04L0043028000, G06F0011340000, H04L0012460000

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Patent Search

Invention Title	AN ASSEMBLY FOR DESIGN ANALYSIS AND ALTERATIONS FOR MEDIUM SIZED ROCKET MOTOR TEST STAND
Publication Number	44/2022
Publication Date	04/11/2022
Publication Type	INA
Application Number	202231061757
Application Filing Date	30/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	PHYSICS
Classification (IPC)	G01R0031340000, C21D0008100000, G01L0001260000, E01F0009627000, G01M0015020000

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Abstract:

[026] The present invention discloses an assembly for design analysis and alterations for medium sized rocket motor test stand. The assembly is comprised of, but not limited to, a chassis having a plurality of metallic bellows providing dynamic nature to the assembly, enabling proper motion of a rocket motor over a load cell for accurate observation during the test using a plurality of jaws and bolt mechanism. Further, the chassis is built from Electrical Metal Tubing and fastened by a plurality of bolts while enclosing a system of three circular rims of mild steel tube with base acting as a holding device for a hydraulic load cell backed up by the metallic bellows and attached to rigid supports at other ends to sustain any kind of vibrations. Accompanied Drawing [FIGS. 1-3]

Complete Specification

Description:[001] The present invention relates to an apparatus, system, assembly and method for providing a rocket motor test stand. More particularly, the present invention relates to an assembly for design analysis and alterations for medium sized rocket motor test stand.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived or pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue of their inclusion in this section.

[004] In prior-art, the STS 5000 developed by Richard Nakka is a popular and most used test stand for the purpose and has been equipped by many researchers and experimenters for the testing of rocket motors. The present invention provides solution to problem and their general design consideration related to the static test used for, but not limited to, medium sized motors. Further, design Considerations and implementation of new mechanism to facilitate improved and stable equipment testing the rocket motors.

[005] Accordingly, there remains a need in the prior art for a technical convergence to make the system, apparatus and method compact, it is in this context that the present invention provides an assembly for design analysis and alterations for medium sized rocket motor test stand. Therefore, it would be useful and desirable to provide an apparatus, assembly and method to meet the above-mentioned needs.

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Invention Title	A HYBRID AIRBORNE WIND TURBINE
Publication Number	44/2022
Publication Date	04/11/2022
Publication Type	INA
Application Number	202231061758
Application Filing Date	30/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	MECHANICAL ENGINEERING
Classification (IPC)	F03D0005000000, F03D0009250000, F03D0001060000, F03D0009320000, H02K0007180000

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Abstract:

The present invention relates to the hybrid airborne wind turbine that inculcate both the stability of a buoyant turbine and the strength and durability of a sail-plane under strong crosswind. The invention comprises two helium-filled circular tubes, the airborne wind turbine's alternator support casing, coupler, and tubes are in from helium-filled tube supports the alternator and coupler, while the other supports the front turbine. The body is built on a lightweight frame that can endure exterior conditions and accommodate power-generating devices. The kite-like wings are made of thin fabric or elastic. The helium-filled hollow cylinder functions as the structure's spine weight without sacrificing power. End fins ensure flying stability even in strong winds. Accompanied Drawing [FIG. 2]

Complete Specification

Description:[001] The present invention relates to the electricity generation by harvesting wind energy at high altitudes. The invention more particularly relates to the hybrid airborne wind turbine that inculcate both the stability of a buoyant turbine and the strength and durability of a sail-plane turbine under strong crosswind.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] A brand new category of wind energy converters has been conceptualised, and they go by the term Airborne Wind Energy Systems (AWES). This innovative technology is one of the creative solutions for producing power from renewable resources. This new generation of devices makes use of flying tethered wings or aeroplanes to winds blowing at atmosphere layers that are inaccessible by conventional wind turbines. These winds have the potential to generate significant amounts of power. The study of AWES got its beginnings in the middle of the seventies, but it has picked up significant steam in the past ten years. Analysis and testing have been done on a variety of systems, each of which is predicated on an entirely unique notion. Multiple prototypes have been constructed in different parts of the world, and the findings from the earliest trials are starting to become accessible.

[004] AWESs are typically composed of two primary elements: a ground system and at least one aircraft. These elements are tied together by ropes in order to facilitate their mechanical connection (and in some instances, their electrical connection as well) (often referred to as tethers). Among the various ideas concerning AWES, we differentiate between Ground-Gen systems and Fly-Gen systems by noting that the transformation of mechanical energy into electrical energy takes place on the ground in Ground-Gen systems, whereas in Fly-Gen systems, the transformation takes place on the aircraft.

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Patent Search

Invention Title	A SILO LAUNCHPAD ASSEMBLY FOR MODEL ROCKETRY
Publication Number	44/2022
Publication Date	04/11/2022
Publication Type	INA
Application Number	202231061759
Application Filing Date	30/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRICAL
Classification (IPC)	H01H0033400000, A63B0021020000, F16H0061000000, A62B0001060000, A63B0021000000

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Abstract:

The present invention discloses a silo launchpad assembly for model rocketry. The proposed assembly uses the silo [002], for storage of the rocket. The silo [002] has base plate [003] which is tethered to ropes. The base plate [003] is placed at the bottom at an initial stage when the rocket has to be launched, the base plate is pulled by a pair of ropes. This sudden action is to propel the rocket into the air. The rope from the base plate is passed through the two pulley wheels [001] to the spring. The spring has three extensions on its sides protruding outside that constitutes the silo base stand [007]. Just above the base, two more pulley wheels are placed to direct the rope to the spring case [004]. The spring case [004], is made to house the spring [005] that is responsible for providing the necessary force to launch the rocket. The spring case [004] is with a locking mechanism to hold the spring in tension at the initial stage. The spring case [004] is also equipped with two pulley wheels on its sides to direct the rope to the silo base [007]. Accompanied Drawings [FIGURE 1-2]

Complete Specification

Description:[001] The present invention, in general, relates to rocketry and its components and more particularly relates to launch of the model rocket using the spring-based mechanism and assembly.

Background of the invention

[002] Testing may involve utilizing water or products that contain water to test various buildings with aluminum or other metallic surfaces. Such testing often entails filling the building under test with water or another aqueous solution, placing it under various stresses, and then checking the structure's walls, especially any seals or joints, for deformation, water leakage, or other anomalies.

[003] Short-term testing utilizing source water, or a comparable water-containing solution may result in slight discoloring of aluminum-containing surfaces and its components. Pitting corrosion and other significant degradation of metal-containing surfaces and components may happen during testing when source water or a water-containing solution is used for long periods of time. In turn, this can cause the structure under test to lose some of its integrity.

[004] Typically, lightweight aluminum alloys are used in the construction of space launch components. For instance, components inside of and the inside walls of propulsion booster tanks are frequently made of aluminum alloy materials. It is desirable to do structural testing, such as static load or proof pressure hydrostatic testing to assess the robustness and integrity of such booster tanks. For this testing, the booster tanks are often filled with a test substance, like water, and left to sit for on seven weeks or longer.

[005] However, using source water or any comparable aqueous solution as a test medium frequently leads to significant corrosion and degradation of the interior aluminum alloy walls and components. The booster tank's components and walls may accumulate unwanted materials as a result of this corrosion.

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Patent Search

Invention Title	VETIVER ROOT BASED SUSTAINABLE ECOFRINDLY ELECTRO-ACOUSTIC STEALTH MATERIAL
Publication Number	44/2022
Publication Date	04/11/2022
Publication Type	INA
Application Number	202231061185
Application Filing Date	27/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	H01L0021683000, A61K0047100000, C12P0007620000, H01L0021268000, H01Q0017000000

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Abstract:

ABSTRACT VETIVER ROOT BASED SUSTAINABLE ECOFRINDLY ELECTRO-ACOUSTIC STEALTH MATERIAL The present invention relates to an eco-friendly bio composite electro-acoustic stealth material and a method (400) for fabricating thereof. The bio composite electro-acoustic stealth material comprising ethanol treated vetiver roots in a ultrasonication along with a blend of epoxy and hardener. The bio composite electro-acoustic stealth material has improved properties of electro-acoustic, thermal insulating, dielectric, mechanical strength along with low cost for fabrication thereof. Figures 1 and 4

Complete Specification

Description:FIELD OF INVENTION

The present disclosure generally relates to the field of electro-acoustic materials. More specifically, the present disclosure relates to bio composite and biodegradable radar-absorbing materials (RAM) with improved properties of electro-acoustic, thermal insulating, dielectric, mechanical strength along with low cost for preparation thereof. The present disclosure also relates to a method for preparing the bio composite and biodegradable RAM.

BACKGROUND OF THE INVENTION

Electro-acoustic stealth material- Radar-absorbing material (RAM) is a class of material which is coated on a surface of structures stealth military aircrafts such as F-16 Raptor to avoid radar detection i.e. invisibility to a radar. In stealth technology, RAMs are used to reduce radar cross-section (RCS). A RAM actually absorbs the incident electromagnetic (EM) energy, thereby reducing the energy reflected or scattered back to the radar which further reduces the RCS signature of the coated object; the camouflaging it from enemy eyes. Apart from defence related matters, RAMs also have benefits of minimizing the problem of electromagnetic interference (EMI) pollution. The EMI problem has been on the rise; owing to the astronomical increase in the microwave operated electronic devices. The EMI pollution interferes with the circuit of the device rendering its function unsatisfactory.

Most of the conventional RAMs consist of ferromagnetic particles embedded in a polymer matrix having a high dielectric constant. For example, iron ball paint containing tiny metal-coated spheres suspended in an epoxy-based paint. The spheres are coated with ferrite or carbonyl iron. Another conventional RAM consists of neoprene containing ferrite or carbon black particles. Both the conventional RAMs work on the principle of converting the radar waves to heat. Some other conventional arts involve fireproofed urethane foam loaded with com

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Patent Search

Invention Title	AN ARTIFICIAL INTELLIGENCE-BASED SPEECH ASSISTED COMPUTER OPERABLE AUTOMATION SYSTEM AND METHOD USING MULTIPLE
Publication Number	42/2022
Publication Date	21/10/2022
Publication Type	INA
Application Number	202231057698
Application Filing Date	09/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	G10L0015260000, G10L0025240000, G10L0015220000, G10L0015020000, G06F0040253000

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Abstract:

The present invention generally relates to an artificial intelligence-based speech assisted computer operable automation system using multiple languages comprises microphone for receiving audio speech input; a speech to text conversion unit for converting audio speech input into text data; a feature extraction unit for extracting feature including Mel Frequency Cepstral Coefficients (MFCCs) / discrete wavelet transform (DWT)/ Linear Discriminant Analysis (LDA) from text data; a natural language processing unit for performing phonetic recognition and acoustic modelling; a parser for dividing the text data into grammatical parts and identifying the parts and their relationship to each other thereby describing a word grammatically by stating the part of speech and explaining the inflection and syntactical relationships; and a control unit for controlling the text data to automate the tasks of a computer file systems and other related application automation using speech synthesis and recognition implemented by an artificial intelligence based speech recognition technology.

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Patent Search

Invention Title	A SMART MANAGEMENT SYSTEM FOR CONTROLLING MEDICAL ROBOT BEDS FOR PREVENTING BEDSORES USING ARTIFICIAL INTELLIGI		
Publication Number	39/2022		
Publication Date	30/09/2022		
Publication Type	INA		
Application Number	202241054495		
Application Filing Date	23/09/2022		
Priority Number			
Priority Country			
Priority Date			
Field Of Invention	BIO-MEDICAL ENGINEERING		
Classification (IPC)	A61B0034300000, A61B0005000000, A61G0007057000, A61B0090000000, G16H0010600000		
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Patent Search

Invention Title	AN EFFICIENT MULTICLASS CLASSIFIER FOR CLASSIFICATION OF ALZHEIMER'S DISEASE/MILD COGNITIVE IMPAIRMENT/NORMAL SUBJEC
Publication Number	49/2022
Publication Date	09/12/2022
Publication Type	INA
Application Number	202231047543
Application Filing Date	22/08/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMPUTER SCIENCE
Classification (IPC)	G06N0003000000, G06K0009620000, G01N0015140000, G16B0050000000, G06K0009000000

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Name	Address	Country
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Abstract:

Set of significant training samples. To determine the appropriate subset size, we examine an objective function in terms of classification accuracy. For adaptation, we hybrid particle swarm adaptation-squirrel search Technique experiments on the Alzheimer's Disease Neuro image-, ING Initiative database show that our method out other state-of-the-art methods in terms of computation time and accuracy. The use of different training-test split ratios makes the proposed method resistant to bias over fitting, and under fitting difficulties. In addition, the results are obtained From 100 iterations to confirm its stability, the suggested model may be helpful for furth in medical image analysis.

Complete Specification

Description:FIELD OF THE INVENTION

This invention represents the field of medical science.

SUMMARY OF THE INVENTION

Alzheimer's disease (AD) is a degenerative brain disease. It is a common form of dementia and a progressive degenerative disease that occurs mainly in adults. Acco to the Alzheimer's Association, approximately 50 million people worldwide suffer from AD and related dementia. Mild cognitive impairment (MCI) is a stage of mem or decline in other cognitive ability who can still conduct most activities of daily living independently.

It can develop for various reasons. Some people with MCI may have dementia, while others may not. If hallmark changes are present in the brain, MCI for neurodegenerative disorders such as Alzheimer's may be an early stage in the disease continuum.

MCI may be fine with normal cognition or may remain stable in some people. Thus, people who are suffering from cognitive changes should seek help at the earliest proper diagnosis and treatment options.

A high probability exists that subjects with MCI may develop AD. Despite its severity, there are no reports on a treatment plan to cure AD or stop its progression. Ho early detection may be a preventive measure for the development of AD and the diagnosis of its prodromal stage MCI. Researchers around the world are working to develop computerized.

Techniques for the Early Diagnosis of AD.2-12 Primary

The motivation behind the development of these techniques is helping specialists to interpret disease, reducing workload, reducing false treatment planning due to

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Invention Title	INTELLIGENT MOBILE CHARGER: AUTOMATIC DISCONNECT THE CHARGER IF YOUR MOBILE BATTERY CHARGE 97.5%.
Publication Number	32/2021
Publication Date	06/08/2021
Publication Type	INA
Application Number	202141021762
Application Filing Date	14/05/2021
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRICAL
Classification (IPC)	H02J0007000000, H04M0001725000, B65H0075380000, A61N0001020000, H01R0013700000

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Patent Search

Invention Title	AN IOT-BASED HEALTH MONITORING SYSTEM AND EMERGENCY ALERT SYSTEM
Publication Number	15/2021
Publication Date	09/04/2021
Publication Type	INA
Application Number	202131013149
Application Filing Date	25/03/2021
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	BIO-MEDICAL ENGINEERING
Classification (IPC)	A61B0005000000, A61B0005145500, A61B0005024000, A61B0005020500, H04N0005232000

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Abstract:

The present invention discloses a health monitoring system with a wearable device and IoT connectivity. The device includes, but not limited to, a wearable housing ir wearable device having a dynamic data end; a stationary device having a static data end and a low-power wide-area network modulation receiver. Further, the weara is configured to store a processing unit, a pulse oximetry sensor, a battery, a SOS button, and a low-power wide-area network modulation transmitter. The processing configured to transceive a plurality of body vitals of a user to the stationary device and an online data repository by using the low-power wide-area network modulati transmitter.

Complete Specification

FIELD OF THE INVENTION

[001] The present invention relates to the field of health monitoring and wearable devices, and in particular to a health monitoring system and a wearable article su wearable band or watch with in-built LoRa transmitter and based on Internet of Things IoT connectivity.

BACKGROUND OF THE INVENTION

[002] The concept of electronic health monitoring and the emergence of equipment, so that people enjoy more and more convenient health monitoring services, pe continue to increase their need to grasp their own health conditions. There are many types of health monitoring equipment and single functions. To complete a nui health monitoring, many monitoring equipment need to be prepared, which is inconvenient to carry and cumbersome to use. With the continuous updating and ra development of electronic technology, human health monitoring devices have been developed into digital products. With the release of Apple Watches, watch-type monitoring devices have become popular and portable human health monitoring devices on the market.

[003] Although, there are numerous arts but the existing system has mant problems such as the accuracy of health measuring aspects is not up to the mark and als available bands which have the capability to measures are of high cost. In the existing bands/wearable devices in market, the location of the individuals is done with help of GPRS. Also, we know that GPRS does not work in tunnels as well as underground areas, which is a major drawback. The bands available in market simply us Bluetooth technology, which has a very limited range of connectivity.

[004] However, above issues has been resolved in proposed invention wearable device/health band using low cost and long range wireless communication technol

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Patent Search

Invention Title	LOT DRIVEN SMART PLUG FOR SPEED CONTROL OF HIGH CURRENT-RATED HOUSEHOLD APPLIANCES
Publication Number	15/2021
Publication Date	09/04/2021
Publication Type	INA
Application Number	202111011525
Application Filing Date	18/03/2021
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMMUNICATION
Classification (IPC)	H04L0029080000, H04W0012080000, F02D0031000000, H02P0025140000, D06F0039080000

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Abstract:

A smart plug is designed to remotely control the high power-high current consuming home appliances. Some important tests are undergone to refine the technology further. At this stage of design, the communication protocols low power Bluetooth (LTE) is used to prototype for fulfilling the IoT aspects of the model. Hence, as part proposed design, a 5 HP DC shunt motor circuitry is modelled, and developed using pulse with modulation (PWM). The pulse width modulation can be achieved in se Here, the PWM generation is done using timer IC. In order to have better open loop speed control as demand varies frequently like in traction system, and in many in applications, this design can also be used after interfacing with proper signal conditioning devices. By varying resistor pot only, we can control the speed of motor wh the simplicity and ease of achieving the result

Complete Specification

The present invention relates to the design and development of a novel Smart Plug which is designed to remotely control the speed of high power-high current con electronic domestic appliances using low-cost communication protocol.

BACKGROUND:

Obtaining the design strategy has been one of the foremost ingredients in the conventional IoT study. The issue of merging multiple levels of complexity through di appliances being worked upon at a particular time is also a point of concern too. According to Ganu et al., the basic contributions of the work are design of low-cost standalone smart plug that can schedule appliances during off-peak periods, design of simple and quenching data mining algorithm to determine peak and off-pea periods, design of novel decentralized load scheduling algorithms that contribute to peak load reduction and load levelling, evaluating the above-mentioned algoritl experimentally. To ensure Grid and Appliance safety, nPlugs circumvent scheduling appliances during the stretch of supply-demand imbalance. Peak load reduction Load levelling without any centralized control is contributed by scheduling algorithms used by nPlugs.[1] If we can move large number of deferrable loads from on-i periods to off-peak periods, then we can alleviate peaking shortage. Peak periods and Supply-Demand imbalance can also be scrutinized by combining real time sei and analytics through nPlugs. According to Ganu et al., till now, peaking shortage has not been addressed so effectively and inexpensively. This is where nPlugs hav own audacity. "Peaker" power plants generally operate on fast starting fuels which in turn can increase the supply. Average supply cost is inferred to have enhancec when "Peakers" are used even for a less period of time as they are expensive in nature. The method to be addressed here has several advantages over the prevalen Strategies like Direct Load Control. The later has a centralized nature which require communication between appliance level monitor and a controller at the utility. T increases the expenses. Indeed a decentralized DSM svstem based on Smart Plugs that sits between deferrable loads

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Patent Search

Invention Title	A SYSTEM FOR COOLING A SPACE
Publication Number	20/2019
Publication Date	17/05/2019
Publication Type	INA
Application Number	201931015508
Application Filing Date	18/04/2019
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	MECHANICAL ENGINEERING
Classification (IPC)	F25B15/00

Inventor

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Mr. S.V.H.NAGENDRA	RESEARCH SCHOLAR, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY , BURLA, ODISHA, PIN 768018 INDIA	India
Dr. PRASANT NANDA	DEAN TPO, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY , BURLA, ODISHA, PIN 768018 INDIA	India
Dr. D.V.S. BHAGAVANULU	DIRECTOR, SREE VIDYANIKETHAN ENGINEERING COLLEGE, SREE SAINATH NAGAR, TIRUPATI, ANDHRA PRADESH 517102 INDIA	India
Mr. PRAGYAN JAIN	ASSOCIATE PROFESSOR, GYAN GANGA INSITUTE OF TECHNOLOGY AND SCIENCES, JABALPUR, MADHYA PRADESH PIN 482003 INDIA	India

Applicant

Name	Address	Country
Mr. S.V.H.NAGENDRA	RESEARCH SCHOLAR, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY , BURLA, ODISHA, PIN 768018 INDIA	India
Dr. PRASANT NANDA	DEAN TPO, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY , BURLA, ODISHA, PIN 768018 INDIA	India
Dr. D.V.S. BHAGAVANULU	DIRECTOR, SREE VIDYANIKETHAN ENGINEERING COLLEGE, SREE SAINATH NAGAR, TIRUPATI, ANDHRA PRADESH 517102 INDIA	India
Mr. PRAGYAN JAIN	ASSOCIATE PROFESSOR, GYAN GANGA INSITUTE OF TECHNOLOGY AND SCIENCES, JABALPUR, MADHYA PRADESH PIN 482003 INDIA	India

Abstract:

The invention relates to a system for cooling a space. The system comprises a HVAC (Heat, Ventilation, Air cooling) duct, which aspect ratio can be adjusted by moving the orifice. A flexible plate is placed above the orifice. Fluid is blown over horizontal part of the flexible plate. The flexible plate curves forward which curvature radius changed. A pair of stepper motors control the curvature of the curved plate. The beam can be flexibly curved along a vertical axis, so as to disperse the blown fluid in increasing the cooling of the space.

Complete Specification

Field of Invention:

Present invention relates to an air cooling system. More particularly, the invention relates to an advanced cooling system which works on the concept of "wall jet configuration".

Background of Invention:

Heating, ventilation, and air conditioning (HVAC) is the technology of indoor and vehicular environmental comfort. Its goal is to provide thermal comfort and accept indoor air quality. HVAC system design is a subdiscipline of mechanical engineering, based on the principles of thermodynamics, fluid mechanics and heat transfer. Deflection of wall-jets in ventilated enclosures described by pressure distribution, Building and Environment, 34(3):329-333 • May 1998, discloses, pressure field in fl systems reflects the flow configuration. Measurements of the pressure along the perimeter of a slot ventilated room have been conducted for different room sizes. momentum of the jet at the end of the room is decreased with increasing room length. The impingement region (region where the influence of the opposing wall is present) starts, independent of room size, when the distance from the supply device is about 70% of the room length. Corner flows could not be predicted by CFD u linear eddy viscosity or standard stress models. However, these effects may be captured by using a second moment closure turbulence model with a new near wall approach now available in literature.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021103132

The Commissioner of Patents has granted the above patent on 22 September 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Syed Jahangir Badashah of Professor, Department of ECE, Sreenidhi Institute of Science & Tech(A) Ghatkesar, Hyderabad Telangana 501301 India

S.Mani Naidu of Professor, Department of Physics, Vel Tech, Rangarajan Dr.Sagunthala R &D, Institute of Science and Technology Deemed to be University, Avadi, Chennai, Tamil Nadu 600062 India

Manas Ranjan Senapati of Associate Professor, Department of IT, Veer Surendra Sai University of Tech. Burla, Odisha 768018 India

Ravikanth Garladinne of Professor, Department of CSE, BVC College of Engineering, Rajahmundry East Godavari District, Andhra Pradesh 533102 India

Shaik Khamuruddeen of Associate Professor, Department of ECE, KKR & KSR Institute of Tech. & Sciences, KITS, Vinjanampadu Guntur, Andhra Pradesh 522017 India

Namuduri SSR Murthy of Professor, Department of ECE, BVC College of Engineering(A), Odalarevu East Godavari district, Andhra Pradesh 533201 India

D. Rammurthy of Research Scholar, Department of ECE, ATME College of Engineering, 13th Kilometer, Mysuru-Kanakapura Mysore, Karnataka 570028 India

Lokesh P Gagnani of Assistant Professor, Department of Computer Science, IICT, Indus University Ahmedabad, Gujarat 382115 India

Rabinarayan Satpathy of Professor in CSE (FMS), Director VC Office, Sri Sri University Cuttack, Odisha 754006 India

Tarun Jaiswal of Research Scholar, Department of Computer Application, National Institute of Technology (NIT) Raipur, Chhattisgarh 492010 India

Sushma Jaiswal of Assistant Professor, Department of CSIT, Guru Ghasidas Vishwavidyalaya, Koni Bilaspur, Chhattisgarh 495009 India

A.V.Sudhakara Reddy of Associate Professor, Department of EEE, Malla Reddy Engineering College Secunderabad, Telangana 500100 India

Title of invention:

AN AUTOMATIC TUMOR DETECTION SYSTEM BASED ON LOCAL LINEAR WAVELET ARTIFICIAL NEURAL NETWORK WITH HYBRID OPTIMIZATION

Name of inventor(s):

Badashah, Syed Jahangir; Naidu, S.Mani; Senapati, Manas Ranjan; Garladinne, Ravikanth; Khamuruddeen, Shaik; Murthy, Namuduri SSR; Rammurthy, D.; Gagnani, Lokesh P; Satpathy, Rabinarayan; Jaiswal, Tarun; Jaiswal, Sushma and Reddy, A.V.Sudhakara



Dated this 22nd day of September 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021103132

Term of Patent:

Eight years from 5 June 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.



Dated this 22nd day of September 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



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021103249

The Commissioner of Patents has granted the above patent on 8 September 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Shahnawaz Ahmad of Research Scholar, Department of Electrical Engineering, Jamia Millia Islamia(Central University) New Delhi Delhi 110025 India

Shabana Mehfuz of Professor, Department of Electrical Engineering, Jamia Millia Islamia(Central University) New Delhi, Delhi 110025 India

T. Vetrivel of Assistant Professor, Department of CSE, K.Ramakrishnan College of Technology Trichirappalli Tamil Nadu 621112 India

Dumala Anveshini of Assistant Professor, Department of IT, Vignan's Nirula Institute of Technology, and Science for Women Palakaluru, Guntur Andhra Pradesh 522009 India

Manas Ranjan Senapati of Associate Professor, Department of Information Technology, Veer Surendra Sai University of Tech. Burla Odisha 768018 India

Y. V. Raghavarao of Professor, Department of CSE, Malla Reddy Engineering College (A) Secunderabad Telangana 500100 India

Rabinarayan Satpathy of Professor in CSE (FMS), Director VC Office, Sri Sri University Cuttack Odisha 754006 India

S. Devaraju of Associate Professor, Department of Computer Applications, Sri Krishna Arts and Science College Coimbatore Tamil Nadu 641008 India

Mandadi Srinivas of Director R&D, Professor in CSE, St. Mary's Group of Institutions Hyderabad Telangana 500097 India

Sushma Jaiswal of Assistant Professor, Department of CSIT, Guru Ghasidas Vishwavidyalaya, Koni Bilaspur Chhattisgarh 495009 India

Tarun Jaiswal of Research Scholar, Department of Computer Application, National Institute of Technology (NIT) Raipur Chhattisgarh 492010 India

Pavithra G. of Associate Professor, Department of ECE, Dayananda Sagar College of Engineering, Kumaraswamy Layout Bangalore Karnataka 560078 India

Title of invention:

A NOVEL MULTI-LEVEL OPTIMIZATION FOR TASK SCHEDULING AND LOAD BALANCING IN CLOUD

Name of inventor(s):

Ahmad, Shahnawaz; Mehfuz, Shabana; Vetrivel, T.; Anveshini, Dumala; Senapati, Manas Ranjan; Raghavarao, Y. V.; Satpathy, Rabinarayan; Devaraju, S.; Srinivas, Mandadi; Jaiswal, Sushma; Jaiswal, Tarun and G., Pavithra



Dated this 8th day of September 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021103249

Term of Patent:

Eight years from 10 June 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.



Dated this 8th day of September 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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021102809

The Commissioner of Patents has granted the above patent on 2 March 2022, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

ABADHAN RANGANATH of VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY BURLA 768018 India

MANAS RANJAN SENAPATI of VEER SURENDRA SAI UNIVERSITY OF, TECHNOLOGY BURLA 768018 India

PRADIP KUMAR SAHU of VEER SURENDRA SAI UNIVERSITY OF, TECHNOLOGY BURLA 768018 India

Title of invention:

A SYSTEM FOR ESTIMATING THE FRACTAL DIMENSION OF IMAGES USING PIXEL RANGE CALCULATION TECHNIQUE

Name of inventor(s):

RANGANATH, ABADHAN; SENAPATI, MANAS RANJAN and SAHU, PRADIP KUMAR

Term of Patent:

Eight years from 24 May 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.



Dated this 2nd day of March 2022

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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021100341

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):

Subodh Panda of Professor, Electronics & Communication Engineering Pragati Engineering College Andra Pradesh India

Sudarson Jena of Associate Professor, Computer Science & Engineering, SUIT, Sambalpur University Jyoti Vihar, Burla, Odisha 768019 India

PREMANSU SEKHARA RATH of Associate professor, Computer Science & Engineering, GIET UNIVERSITY Gunupur, At – Gobriguda, Po- Kharling Gunupur, Odisha 765022 India

NILAMBAR SETHI of Associate Professor, Computer Science & Engineering, GIET UNIVERSITY Gunupur, At – Gobriguda, Po- Kharling Gunupur, Odisha 765022 India

SANTOSH KUMAR MAJHI of Assistant Professor, Computer Science & Engineering, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA, ODISHA India

MURALI KRISHNA SENAPATY of Assistant Professor, Computer Science & Engineering, GIET UNIVERSITY Gunupur, At – Gobriguda, Po- Kharling Gunupur, Odisha 765022 India

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MUKESH BATHRE of Research Scholar, Information Technology, VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA, ODISHA India

SANTOSH SONI of Assistant Professor, Information Technology, GURU GHASIDAS UNIVERSITY BILASPUR, CG India

SANJAY KUMAR GIRI of Asst. Professor, Computer Science & Engineering, RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING Jagannathpur, Khorda, Odisha 752057 India

Title of invention:

Health Related Crisis Ready Plan through Wireless Sensor Network and the Cloud Computing at Populated Spots

Name of inventor(s):

Panda, Subodh; Jena, Sudarson; RATH, PREMANSU SEKHARA; SETHI, NILAMBAR; MAJHI, SANTOSH KUMAR; SENAPATY, MURALI KRISHNA; Bagjadab, Amiya Bhusan; BATHRE, MUKESH; SONI, SANTOSH and GIRI, SANJAY KUMAR

Term of Patent:

Eight years from 19 January 2021



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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021100341

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.



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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021100648

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):

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Kaushik Mishra of Department of Computer Science and Engineering, Veer Surendra Sai, University of Technology Burla Odisha 768018 India

Sunil Kumar Dhal of Sri Sri University, Sr Sri Vihar, Ward No-3 Godisahi, Cuttack Odisha 754006 India

Nilayam Kumar Kamila of 3314 OLD CAPITOL TRL. APT H5 WILMINGTON DE 19808 United States of America

Biswajit Brahma of 32559 Lake Bridgeport St Fremont CA 94555 United States of America

Mahesh Nukala of McLean terrace crabury NJ 08512 United States of America

Subhendu Kumar Pani of Dept. Of Computer Science and Engineering, Orissa Engineering College Bhubaneswar Orissa 752050 India

Rosy Pradhan of Department of Electrical Engineering, Veer Surendra Sai University of Technology Burla Odisha 768018 India

Title of invention:

A SYSTEM AND METHOD FOR SCHEDULING TASK IN IOT-FOG-CLOUD CONTINUUM

Name of inventor(s):

Majhi, Santosh Kumar; Mishra, Kaushik; Dhal, Sunil Kumar; Kamila, Nilayam Kumar; Brahma, Biswajit; Nukala, Mahesh; Pani, Subhendu Kumar and Pradhan, Rosy

Term of Patent:

Eight years from 2 February 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.



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.



Australian Government

IP Australia

CERTIFICATE OF GRANT INNOVATION PATENT

Patent number: 2021101890

The Commissioner of Patents has granted the above patent on 19 May 2021, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Biswaranjan Acharya of School of Computer Engineering, KIIT Deemed to be University, Odisha Odisha 751024 India

Sandhya Makkar of Sr. Assistant Professor, (Operations & Systems), Lal Bahadur Shastri Inst. of Management Delhi, India

Ipseeta Nanda of Associate Professor, Faculty in Information Technology, Gopal Narayan Singh University Jamhuar, Bihar, India

Alina Dash of Assistant Professor, Department of CSE, VSSUT Burla, Odisha, India

Puja Das of Computer Science Department, Hiralal Mazumder Memo. College for Women Kolkata, India

Asik Rahaman Jamader of Dept. of Tourism and Hotel Management, Penguin School of Hotel Management Kolkata, India

Mahendra Prasad Nath of Dept. of Computer Science & Engineering, Siksha 'O' Anusandhan, Deemed to be University Bhubaneswar, Odisha, India

Sidhartha Sekhar Dash of Assistant Professor-II, School of Law, KIIT University Bhubaneshwar, Odisha, India

Sarvesh Kumar Shahi of Assistant Professor-I, School of Law, KIIT University Bhubaneshwar, Odisha, India

Title of invention:

INTERNET OF THINGS APPARATUS FOR DETECTION & MONITOR OPERATION PHYSICAL PARAMETER FOR SAFE MANHOLE

Name of inventor(s):

Acharya, Biswaranjan; Makkar, Sandhya; Nanda, Ipseeta; Dash, Alina; Das, Puja; Jamader, Asik Rahaman; Nath, Mahendra Prasad; Dash, Sidhartha Sekhar and Shahi, Sarvesh Kumar

Term of Patent:

Eight years from 13 April 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.



Dated this 19th day of May 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.



Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India



Application Details	
APPLICATION NUMBER	202131025084
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	05/06/2021
APPLICANT NAME	1 . Mrs.Alina Dash 2 . Mr.Ninad Madhab 3 . Dr.Sharmila Subudhi 4 . Dr.Deepak Kumar Patel
TITLE OF INVENTION	A SYSTEM FOR COUNTING PEOPLE IN A CROWD USING THE AUDIO WATERMARKING TECHNOLOGY
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	harishats@live.com
ADDITIONAL-EMAIL (As Per Record)	harishats2050@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	09/07/2021



REPUBLIC OF SOUTH AFRICA

REPUBLIEK VAN SUID AFRIKA

PATENTS ACT, 1978

CERTIFICATE

In accordance with section 44 (1) of the Patents Act, No. 57 of 1978, it is hereby certified that:

MR.ANANDBABU GOPATOTI; MS.SHIKHA GAUTAM; DR.V.MAHESH KUMAR REDDY; MS.S.JAYACHITRA; DR.R.PRIYA; DR.JOSE REENA K; DR.A.S.ANEETHA; MS.P.TAMILSELVI; MS.VISHWA PRIYA V; MRS.ALINA DASH

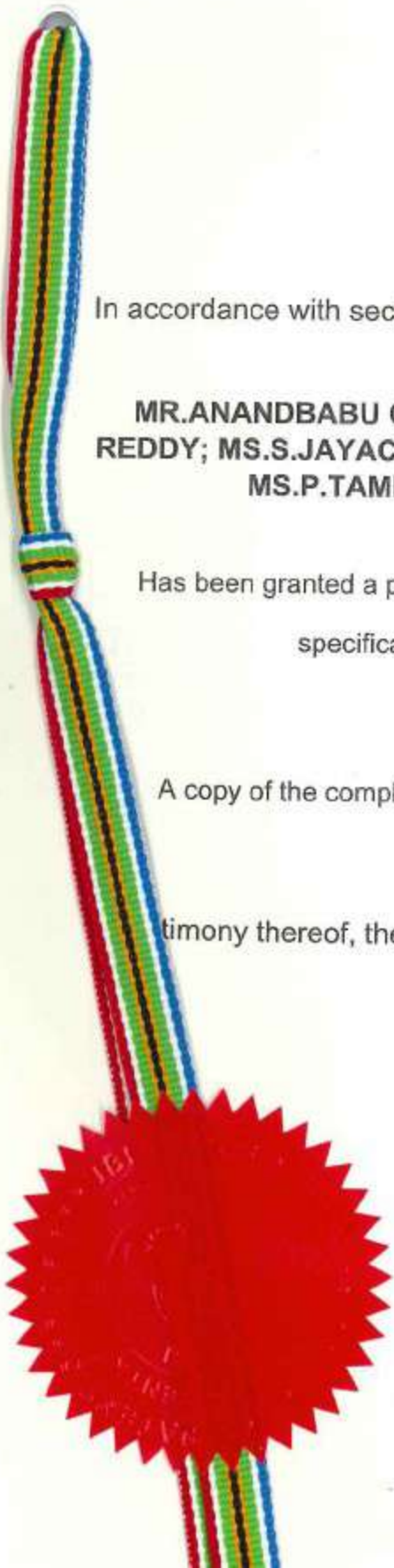
Has been granted a patent in respect of an invention described and claimed in complete specification deposited at the Patent Office under the number

2023/04529

A copy of the complete specification is annexed, together with the relevant Form P2.

In testimony thereof, the seal of the Patent Office has been affixed at Pretoria with effect from the 29th day of November 2023

Registrar of Patents



REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978
REGISTER OF PATENTS

FORM P2

Official application No.		Lodging date: Provisional		Acceptance date	
21	01 2023/04529	22		47	17 October 2023
International classification		Lodging date: National phase		Granted date	
51	G06F	23	19 April 2023		29 November 2023
71	Full name(s) of applicant(s)/Patentee(s):				
(1) Mr.Anandbabu Gopatoti; (2) Ms.Shikha Gautam; (3) Dr.V.Mahesh Kumar Reddy; (4) Ms.S.Jayachitra; (5) Dr.R.Priya; (6) Dr.Jose Reena K; (7) Dr.A.S.Aneetha; (8) Ms.P.Tamilselvi; (9) Ms.Vishwa Priya V; (10) Mrs.Alina Dash					
71	Applicant(s) substituted:			Date registered	
71	Assignee(s):			Date registered	
72	Full name(s) of inventor(s):				
(1) Mr.Anandbabu Gopatoti; (2) Ms.Shikha Gautam; (3) Dr.V.Mahesh Kumar Reddy; (4) Ms.S.Jayachitra; (5) Dr.R.Priya; (6) Dr.Jose Reena K; (7) Dr.A.S.Aneetha; (8) Ms.P.Tamilselvi; (9) Ms.Vishwa Priya V; (10) Mrs.Alina Dash					
Priority claimed:		Country	Number	Date	
		IN	202341013611	28 February 2023	
54	Title of invention				
COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWORK					
Address of applicant(s)/patentee(s):					
(1) Department of ECE, Hindusthan College of Engineering & Technology, Coimbatore, Tamil Nadu, India; (2) Assistant Professor, Department of Computer Engineering, Poornima Institute of Engineering & Technology, Jaipur, Rajasthan, India; (3) Assistant Professor, Department of Electrical & Electronics Engineering, KSRM College of Engineering, Yerramasupalli Village, YSR Kadapa District, Andhra Pradesh, India; (4) Assistant Professor, Department of ECE, PSNA College of Engineering and Technology, Dindigul, Tamil Nadu, India; (5) Assistant Professor (Senior Grade), PSG College of Technology, Coimbatore, Tamil Nadu, India; (6) Assistant Professor, Department of Computer Science, Vels Institution of Science Technology and Advanced Studies, Pallavaram, Chennai, Tamil Nadu, India; (7) Associate Professor, Department of Computer Science, Vels Institution of Science Technology and Advanced Studies, Pallavaram, Chennai, Tamil Nadu, India; (8) Assistant Professor, Department of Computer Science, Vels Institution of Science Technology and Advanced Studies, Pallavaram, Chennai, Tamil Nadu, India; (9) Assistant Professor, Department of Computer Science, Vels Institution of Science Technology and Advanced Studies, Pallavaram, Chennai, Tamil Nadu, India; (10) Assistant Professor, Department of Computer Science and Engineering, Veer Surendra Sai University of Technology, Burla, Sambalpur, Odisha, India					
74	Address for service				
Sibanda and Zantwijk, Oaktree Corner, 9 Kruger Street, Oaklands (PO Box 1615 Houghton 2041), Johannesburg, 2192, SOUTH AFRICA Reference no.: PT_CP_ZA00008351 ([InsID:])					
61	Patent of addition No.			Date of any change	

Fresh application based on.	Date of any change

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978
COMPLETE SPECIFICATION
 [Section 30(1) – Regulation 28]

FORM P7

OFFICIAL APPLICATION NO.

LODGING DATE

21	01	2023/04529
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22	19 April 2023
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INTERNATIONAL CLASSIFICATION

51	G06F
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FULL NAME(S) OF APPLICANT(S)

71	Mr.Anandbabu Gopatoti Ms.Shikha Gautam Dr.V.Mahesh Kumar Reddy Ms.S.Jayachitra Dr.R.Priya Dr.Jose Reena K Dr.A.S.Aneetha Ms.P.Tamilselvi Ms.Vishwa Priya V Mrs.Alina Dash
----	--

FULL NAME(S) OF INVENTORS(S)

72	Mr.Anandbabu Gopatoti Ms.Shikha Gautam Dr.V.Mahesh Kumar Reddy Ms.S.Jayachitra Dr.R.Priya Dr.Jose Reena K Dr.A.S.Aneetha Ms.P.Tamilselvi Ms.Vishwa Priya V Mrs.Alina Dash
----	--

TITLE OF INVENTION

54	COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWORK
----	--

TITLE OF THE INVENTION

COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE
SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWORK

FIELD OF THE INVENTION

[001] The present invention relates to the field of corporate security operations. More specifically, to comprehensible artificial intelligence to assess corporate security operations using EEG data within Internet of Things (IoT) framework.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Corporate security operations are crucial to the success of any business, as they protect sensitive information, assets, and employees from potential threats. The use of artificial intelligence (AI) and the Internet of Things (IoT) has become increasingly popular in recent years, as they offer a range of benefits that can help enhance corporate security. However, current AI systems can be complex and difficult to understand, making it challenging for security personnel to interpret and act upon their outputs. Additionally, traditional methods of collecting security-related data may not provide sufficient insight into an employee's state of mind, which can be a critical factor in assessing security risks.

[004] The use of EEG data offers a unique solution to this problem, as it provides a more accurate and comprehensive picture of an employee's mental

state. EEG devices can be worn by employees during their workday, recording their brain activity and specifically the activity in the prefrontal cortex, which is responsible for decision-making, attention, and problem-solving. The collected data is transmitted to a cloud-based server in real-time, where it is analyzed using machine learning module to determine an employee's mental state. The system's outputs are presented in a user-friendly dashboard, allowing security personnel to easily interpret and act upon the system's recommendations.

[005] The comprehensible artificial intelligence system for assessing corporate security operations using EEG data within an IoT framework offers several advantages over traditional methods of collecting security-related data. The system provides a more accurate and comprehensive picture of an employee's mental state, which can be critical in assessing security risks. The use of real-time analysis allows security personnel to act quickly to address potential security risks. The user-friendly dashboard provides a clear and concise overview of the state of the workforce, allowing security personnel to easily interpret and act upon the system's recommendations.

[006] Overall, the comprehensible artificial intelligence system for assessing corporate security operations using EEG data within an IoT framework is a promising innovation that offers a range of benefits to businesses seeking to enhance their security operations. The use of EEG data provides a unique and valuable insight into an employee's mental state, and the system's real-time analysis and user-friendly dashboard make it an effective tool for security personnel. By leveraging the power of AI and IoT, businesses can take proactive steps to mitigate potential security risks and protect their assets, employees, and sensitive information.

[007] Accordingly, based on aforesaid facts, there remains a need in the prior art to provide comprehensible artificial intelligence to assess corporate security operations using EEG data within Internet of Things (IoT) framework. Therefore, it would be useful and desirable to have a system, method, apparatus, and interface to meet the above-mentioned needs.

SUMMARY OF THE PRESENT INVENTION

[008] According to one aspect of the present invention, a system for assessing corporate security operations using EEG data within an IoT framework. The system comprises a plurality of EEG devices worn by employees to record brain activity in the prefrontal cortex, a cloud-based server for real-time data transmission, machine learning module for analyzing the collected EEG data to determine the mental state of each employee, a user-friendly dashboard for presenting the system's outputs, and a security module configured to receive and act upon the system's recommendations in response to identified security risks.

[009] In one embodiment, the system operates within an IoT framework, where the plurality of EEG devices worn by employees and the cloud-based server are connected through a network. The collected EEG data is analyzed in real-time, allowing security personnel to quickly identify potential security risks. The machine learning module are trained on a dataset of EEG data and security-related events, allowing the system to identify patterns and predict potential security risks. The system's user-friendly dashboard displays the mental state of each employee, trends in mental states over time, and recommendations for addressing potential security risks, among other information.

[010] In one embodiment of the invention, a novel solution for assessing corporate security operations by utilizing EEG data within an IoT framework. By monitoring the mental state of employees, the system provides security personnel with valuable insights into the state of the workforce and identifies potential security risks before they occur. The system's machine learning module enable it to adapt and improve over time, becoming more accurate and effective in identifying security risks. Overall, the present invention provides a valuable tool for enhancing corporate security operations and mitigating potential security threats.

[011] The system further comprises a module for identifying abnormal changes in the mental state of an employee and a module for determining the level of risk associated with identified security threats. The system's machine learning module are configured to adapt and improve over time, becoming more accurate and effective in identifying security risks. The system's security module is configured to provide alerts to security personnel, initiate security protocols, or take other appropriate actions in response to identified security risks. The system's user-friendly dashboard may display the mental state of each employee, trends in mental states over time, and recommendations for addressing potential security risks, among other information.

[012] According to an embodiment, the present invention provides a valuable tool for enhancing corporate security operations and mitigating potential security threats by utilizing EEG data within an IoT framework. The system's ability to monitor the mental state of employees provides security personnel with valuable insights into the state of the workforce and identifies potential security risks before they occur. The system's machine learning module enable

it to adapt and improve over time, becoming more accurate and effective in identifying security risks. The system's user-friendly dashboard provides security personnel with a clear and concise overview of the state of the workforce, making it easier for them to take appropriate action to mitigate potential security risks.

[013] These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[014] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[015] FIG. 1, illustrates a block diagram of a system (100) for assessing corporate security operations using EEG data within an Internet of Things (IoT) framework, in accordance with an embodiment of the present invention.

[016] FIG. 2, illustrates a flowchart of a method (200) for assessing corporate security operations using EEG data within an Internet of Things (IoT) framework, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[017] While the present invention is described herein by way of example using embodiments and illustrative drawings, those skilled in the art will recognize

that the invention is not limited to the embodiments of drawing or drawings described and are not intended to represent the scale of the various components. Further, some components that may form a part of the invention may not be illustrated in certain figures, for ease of illustration, and such omissions do not limit the embodiments outlined in any way. It should be understood that the drawings and detailed description thereto are not intended to limit the invention to the particular form disclosed, but on the contrary, the invention is to cover all modifications, equivalents, and alternatives falling within the scope of the present invention as defined by the appended claims. As used throughout this description, the word "may" is used in a permissive sense (i.e. meaning having the potential to), rather than the mandatory sense, (i.e. meaning must). Further, the words "a" or "an" mean "at least one" and the word "plurality" means "one or more" unless otherwise mentioned. Furthermore, the terminology and phraseology used herein is solely used for descriptive purposes and should not be construed as limiting in scope. Language such as "including," "comprising," "having," "containing," or "involving," and variations thereof, is intended to be broad and encompass the subject matter listed thereafter, equivalents, and additional subject matter not recited, and is not intended to exclude other additives, components, integers or steps. Likewise, the term "comprising" is considered synonymous with the terms "including" or "containing" for applicable legal purposes. Any discussion of documents, acts, materials, devices, articles and the like is included in the specification solely for the purpose of providing a context for the present invention. It is not suggested or represented that any or all of these matters form part of the prior art base or were common general knowledge in the field relevant to the present invention.

[018] In this disclosure, whenever a composition or an element or a group of elements is preceded with the transitional phrase “comprising”, it is understood that we also contemplate the same composition, element or group of elements with transitional phrases “consisting of”, “consisting”, “selected from the group of consisting of”, “including”, or “is” preceding the recitation of the composition, element or group of elements and vice versa.

[019] The present invention relates to a system and method for assessing corporate security operations using EEG data within an IoT framework. The system comprises a plurality of EEG devices worn by employees to record brain activity in the prefrontal cortex, a cloud-based server for real-time data transmission, machine learning module for analyzing the collected EEG data to determine the mental state of each employee, a user-friendly dashboard for presenting the system's outputs, and a security module configured to receive and act upon the system's recommendations in response to identified security risks.

[020] FIG. 1, illustrates a block diagram of a system (100) for assessing corporate security operations using EEG data within an Internet of Things (IoT) framework, in accordance with an embodiment of the present invention.

[021] The system comprises a plurality of EEG devices (102) that are worn by employees during their workday to record brain activity in the prefrontal cortex. The collected EEG data is transmitted in real-time to a cloud-based server (104) for analysis using machine learning module (106). The server is configured to receive and process data from the plurality of EEG devices (102) and to store the data in a database for later analysis. The system also includes a user-

friendly dashboard (108) that presents the system's outputs to security personnel.

[022] The EEG devices (102) are configured to collect and transmit data to the cloud-based server (104) through a wireless network. The devices are lightweight and non-invasive and can be worn comfortably by employees during their workday. The server (104) is responsible for receiving and processing the EEG data from the plurality of devices, and for running the machine learning module (106) to analyze the data. The server is also responsible for storing the data in a database for later analysis.

[023] The machine learning module (106) are trained on a dataset of EEG data and security-related events, allowing the system to identify patterns and predict potential security risks. The machine learning module (106) includes instructions which are responsible for analyzing the collected EEG data to determine the mental state of each employee. The system uses a range of machine learning module (106), including deep learning and convolutional neural networks, to analyze the collected EEG data.

[024] The user-friendly dashboard (106) presents the system's outputs to security personnel in a clear and concise format. The dashboard displays the mental state of each employee, trends in mental states over time, and recommendations for addressing potential security risks, among other information. The dashboard is designed to be user-friendly and intuitive, making it easy for security personnel to access and understand the system's outputs.

[025] FIG. 2, illustrates a flowchart of a method (200) for assessing corporate security operations using EEG data within an Internet of Things (IoT) framework, in accordance with an embodiment of the present invention.

[026] The method comprises a series of steps, including collecting EEG data from employees, analyzing the collected data using machine learning module (106), identifying potential security risks, and presenting the system's outputs to security personnel through a user-friendly dashboard.

5 **[027]** Step 202 involves collecting EEG data from employees using a plurality of EEG devices. The devices are worn by employees during their workday to record brain activity in the prefrontal cortex. The collected EEG data is transmitted in real-time to a cloud-based server for analysis using machine learning module (106).

10 **[028]** Step 204 involves analyzing the collected EEG data using machine learning module (106). The machine learning module (106) are trained on a dataset of EEG data and security-related events, allowing the system to identify patterns and predict potential security risks. The machine learning module (106) are responsible for analyzing the collected EEG data to determine the mental
15 state of each employee.

[029] Step 206 involves identifying potential security risks based on the analyzed EEG data. The system uses a range of metrics, including abnormal changes in mental state, to identify potential security risks. The system's machine learning module (106) enable it to adapt and improve over time,
20 becoming more accurate and effective in identifying security risks.

[030] Step 208 involves presenting the system's outputs to security personnel through a user-friendly dashboard. The dashboard displays the mental state of each employee, trends in mental states over time, and recommendations for addressing potential security risk.

[031] In an aspect, the method comprises collecting EEG data from employees using a plurality of EEG devices; transmitting the data to a cloud-based server; analyzing the collected EEG data using machine learning module; analyzing the data using machine learning module to determine the mental state of each employee; identifying potential security risks based on the analyzed EEG data; and presenting the system's outputs to security personnel through a user-friendly dashboard.

[032] While the present invention has been described with reference to particular embodiments, it should be understood that the embodiments are illustrative and that the scope of the invention is not limited to these embodiments. Many variations, modifications, additions and improvements to the embodiments described above are possible. It is contemplated that these variations, modifications, additions and improvements fall within the scope of the invention.

We Claim:

1. A system for assessing corporate security operations using EEG data within an Internet of Things (IoT) framework, the system comprising:

a plurality of EEG devices worn by employees during their workday to record brain activity in the prefrontal cortex, which is responsible for decision-making, attention, and problem-solving;

a cloud-based server for real-time data transmission, configured to receive and process EEG data from the plurality of EEG devices worn by employees;

a machine learning module for analyzing the collected EEG data to determine the mental state of each employee, said machine learning module being trained on a dataset of EEG data and security-related events;

a user-friendly dashboard for presenting the system's outputs, providing security personnel with a clear and concise overview of the state of the workforce; and

a security module configured to receive and act upon the system's recommendations in response to identified security risks.

2. The system as claimed in claim 1, wherein the EEG devices are worn by employees during their workday to record brain activity in the prefrontal cortex, which is responsible for decision-making, attention, and problem-solving.

3. The system as claimed in claim 1, wherein the cloud-based server receives real-time data transmissions from the plurality of EEG devices, and the machine

learning module analyze the data to determine the mental state of each employee.

4. The system as claimed in claim 1, wherein the system's outputs are presented
5 in a user-friendly dashboard, providing security personnel with a clear and concise overview of the state of the workforce.

5. The system as claimed in claim 1, wherein the machine learning module are
trained on a dataset of EEG data and security-related events, allowing the
10 system to identify patterns and predict potential security risks.

6. A method for assessing corporate security operations using EEG data within
an Internet of Things (IoT) framework, the method comprising:

collecting EEG data from employees using a plurality of EEG devices;

15 transmitting the data to a cloud-based server;

analyzing the collected EEG data using machine learning module;

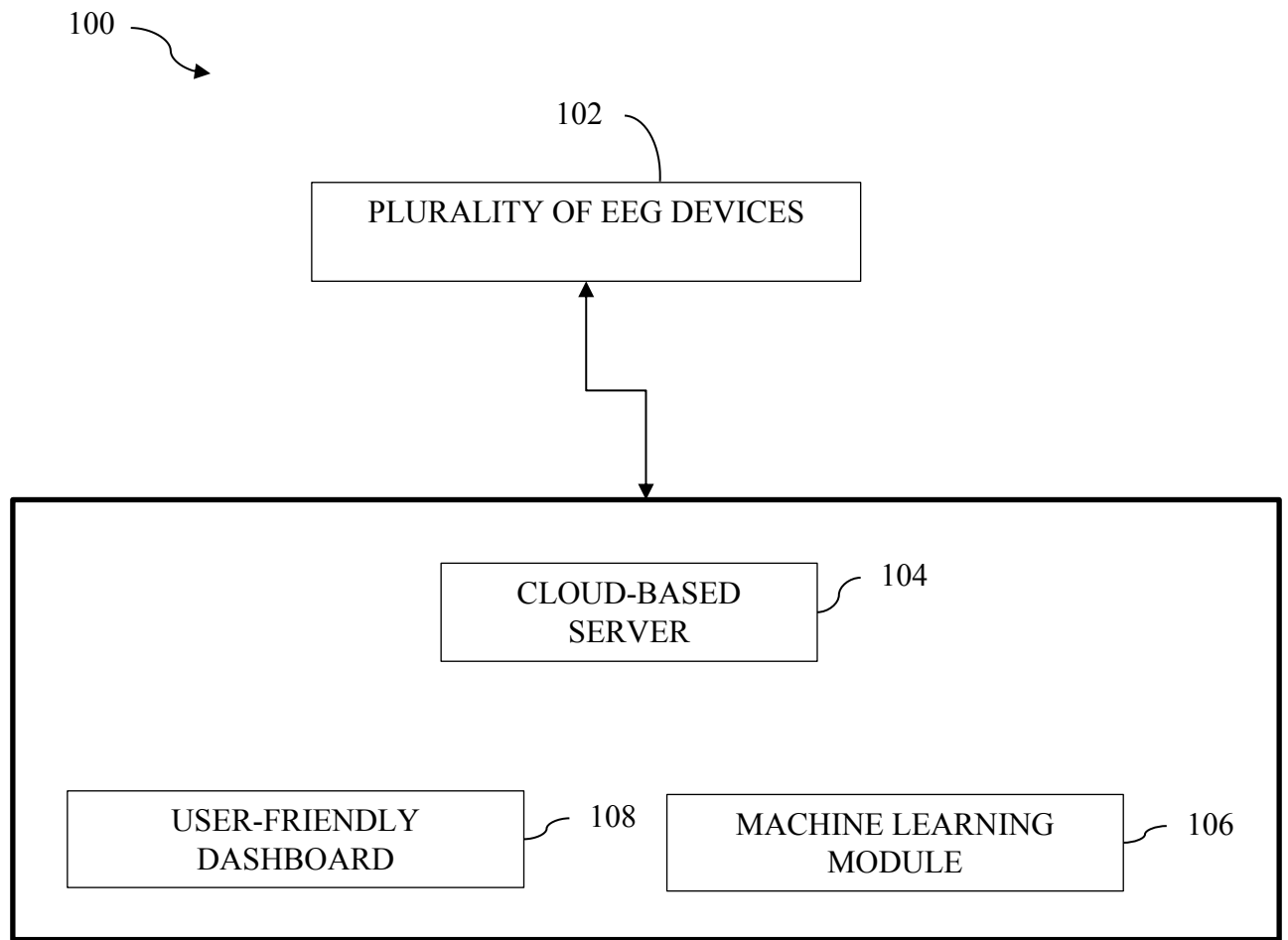
analyzing the data using machine learning module to determine the
mental state of each employee;

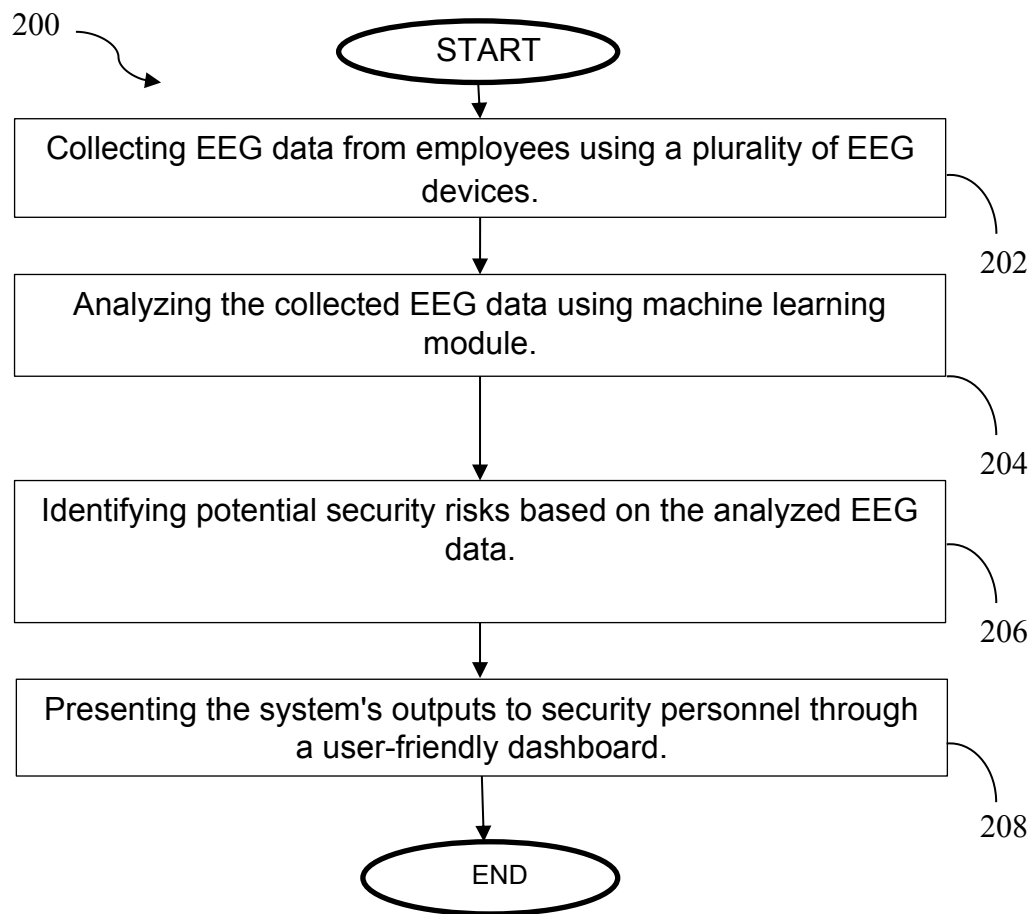
identifying potential security risks based on the analyzed EEG data; and

20 presenting the system's outputs to security personnel through a user-friendly dashboard.

7. The method as claimed in claim 6, wherein the collected EEG data is analyzed
in real-time, allowing security personnel to quickly identify potential security
25 risks.

8. The method as claimed in claim 6, wherein the machine learning module are trained on a dataset of EEG data and security-related events, allowing the system to identify patterns and predict potential security risks.
- 5 9. The method as claimed in claim 6, wherein the system's outputs are presented in a user-friendly dashboard, providing security personnel with a clear and concise overview of the state of the workforce.

**FIG. 1**

**FIG. 2**

ABSTRACT**COMPREHENSIBLE ARTIFICIAL INTELLIGENCE TO ASSESS CORPORATE
SECURITY OPERATIONS USING EEG DATA WITHIN IOT FRAMEWORK**

The present invention relates to a system and method for assessing corporate security operations using EEG data within an IoT framework. The system comprises a plurality of EEG devices worn by employees to record brain activity in the prefrontal cortex, a cloud-based server for real-time data transmission, machine learning module for analyzing the collected EEG data to determine the mental state of each employee, a user-friendly dashboard for presenting the system's outputs, and a security module configured to receive and act upon the system's recommendations in response to identified security risks.



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Property
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Certificate of Registration for a UK Design

Design number: 6379779

Grant date: 06 September 2024

Registration date: 20 July 2024

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Alina Dash, Venkata Durga Prasad Sambrow, Dr. Ruth Ramya Kalangi,

Priyadarshini Voosala, Lakshmi Munirathnam, Ms. Deepa Anandan, Dr. Saibal

Majumder, Dr. Rajiniginath Dhandapani

in respect of the application of such design to:

Autonomous Biometric Authentication System for Advanced Security

International Design Classification:

Version: 14-2023

Class: 14 RECORDING, TELECOMMUNICATION OR DATA PROCESSING
EQUIPMENT

Subclass: 02 DATA PROCESSING EQUIPMENT AS WELL AS PERIPHERAL
APPARATUS AND DEVICES

Adam Williams

Comptroller-General of Patents, Designs and Trade Marks

Intellectual Property Office

The attention of the Proprietor(s) is drawn to the important notes overleaf.

