



INDEX SHEET		
Criterion	Criterion 3	
Key Indicators	3.3: Ecosystem for innovation	Weblink
Metric No 3.3.1	Patents	https://rvce.edu.in/rvce-patent-details
	Innovative Clubs	https://rvce.edu.in/rvce-students-clubs-technical-innovative
	Indian Knowledge System	https://naac.rvce.edu.in/sites/default/files/2024-05/3.3.1.IKS.pdf
	Centers of Excellence & Centers of Competence	https://rvce.edu.in/sites/default/files/RVCE-CoE-Brochure.pdf

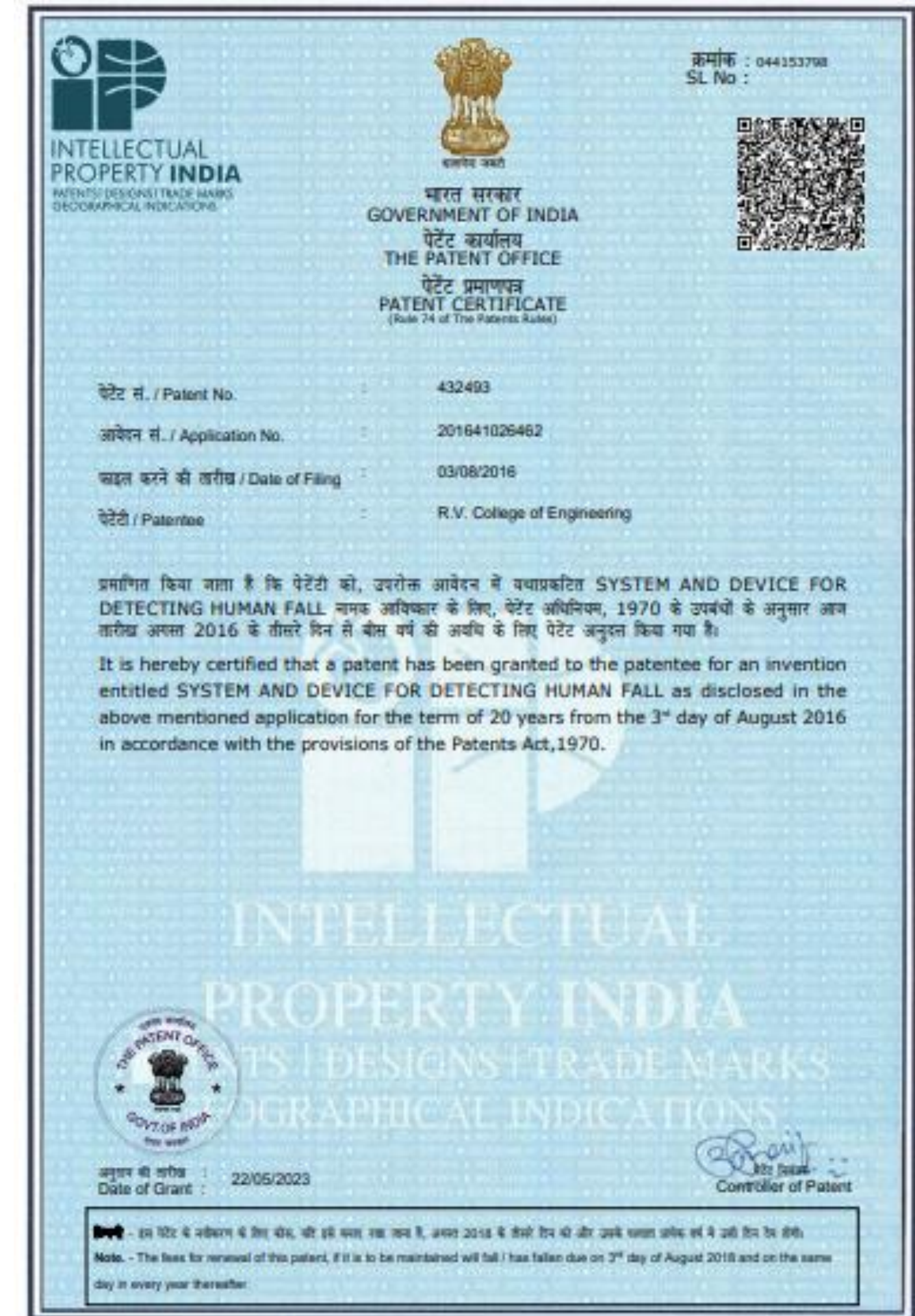
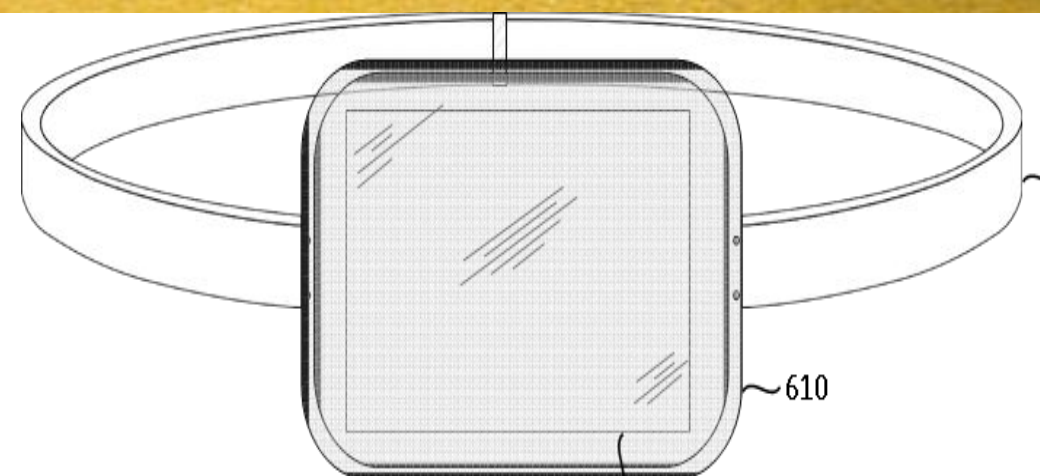


**RV College of
Engineering®**

Go, change the world

INNOVATIONS AT RV COLLEGE OF ENGINEERING

Design and development of a non invasive continuous Blood pressure Monitoring system



Finger tip BP measuring device – PPG based –
Indian patent granted in 2023 with continuous
BP monitoring , Holter substitute and User-
friendly

Human fall detecting device – triaxial
accelerometer based Indian patent granted in 2023
- use of biocompatible PDMS substrate accurate
tilt angle measurement sends SMS to the
concerned

A passive hand Operated lower extremity exoskeleton for Climbing stairs- Indian patent published – 2023

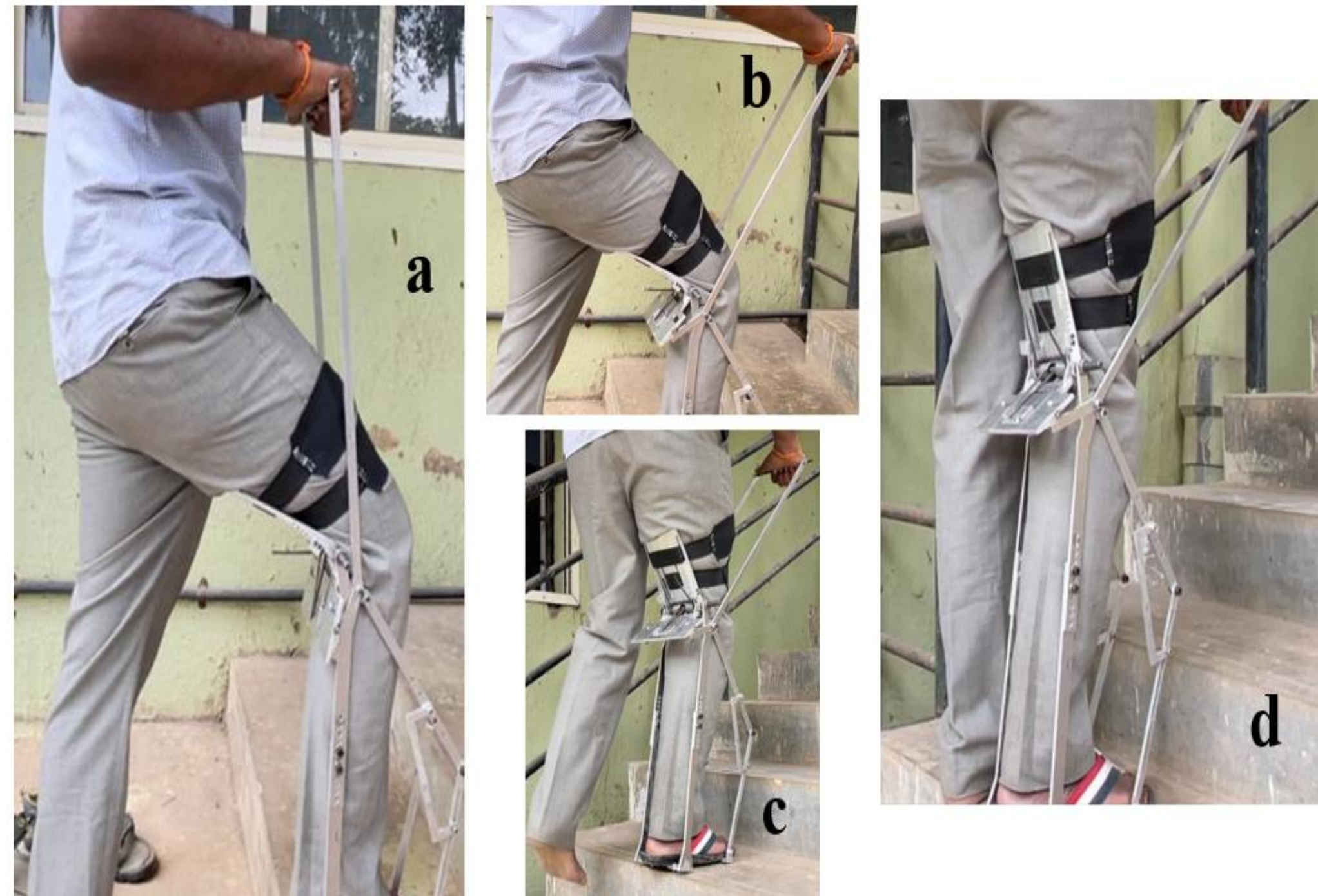


Fig 7.13 Stage of stair climb cycle

Features: assists people with lower extremity weakness, knee injured for stairs climbing mechanical actuation device to amplify force by torsion spring and lever

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241028671 A

(19) INDIA

(22) Date of filing of Application :18/05/2022

(43) Publication Date : 24/11/2023

(54) Title of the invention : A Hand Operated Lower Extremity Exoskeleton for Climbing Stairs

(51) International classification	:A61H0003000000, A63B0021000000, A61H0001020000, B25J0009000000, G05G0009047000	(71)Name of Applicant :
		1)R. V. College of Engineering Address of Applicant :Mysore Road, R.V. Vidyaniketan post, Bangalore-560059, Karnataka, India. Bangalore Karnataka India
(31) Priority Document No	:NA	(72)Name of Inventor :
		1)Sridhar R 2)Gangadhar Angadi 3)H N Narasimha Murthy 4)B G Sudarshan 5)Rahul Naik 6)Rakesh 7)Sagar R Yaligar 8)Sourabh Dattadigambar Patil
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(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	

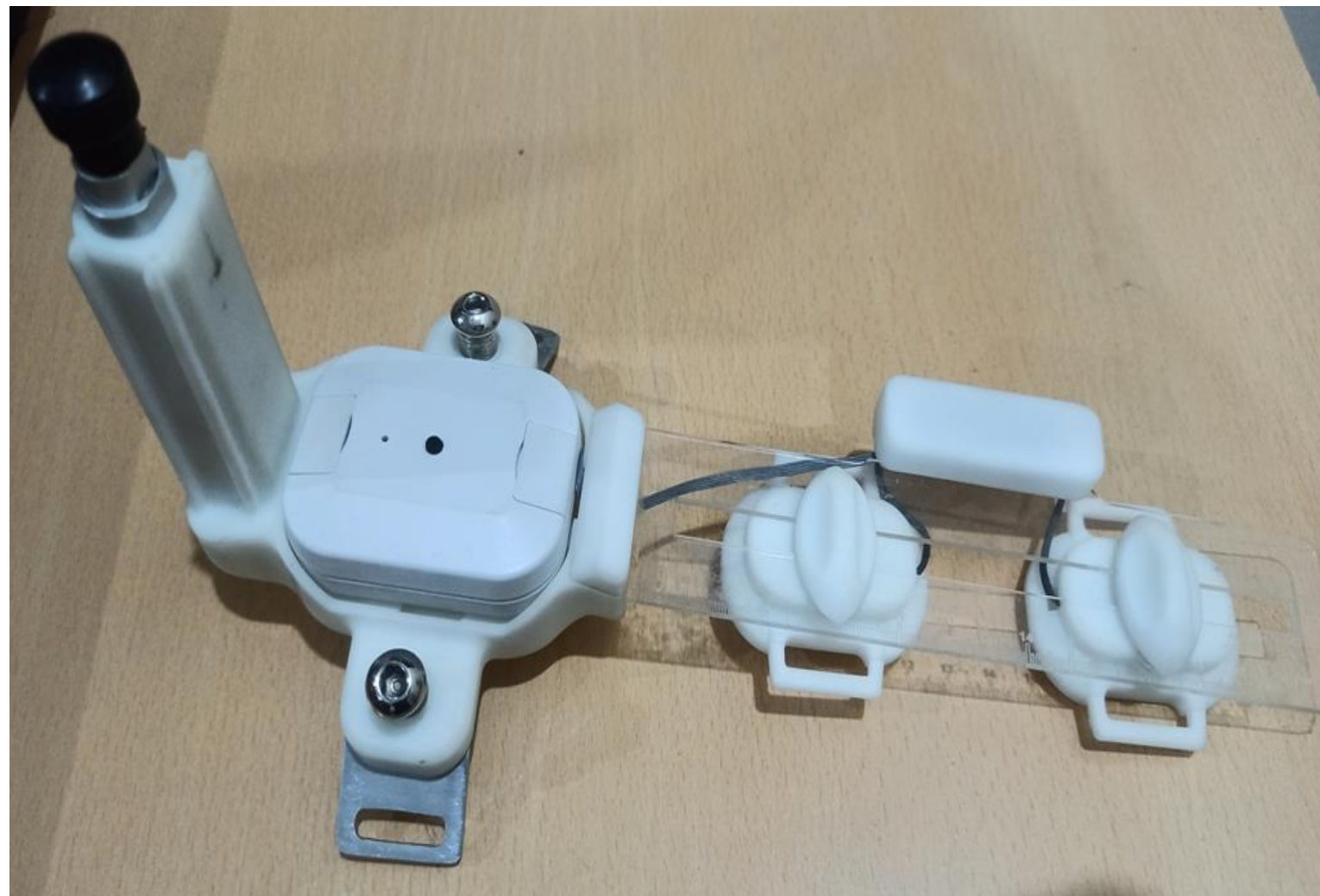
(57) Abstract :

Title: A Hand Operated Lower Extremity Exoskeleton for Climbing Stairs ABSTRACT A hand operated lower extremity exoskeleton 100 for climbing stairs comprising a lever 110 configured to receive force from a user, a lower pad 120 configured to receive force from the lever 110 an upper pad 130 configured to receive force from the lower pad 120, at two mechanical springs (140A and 140B) configured to transfer force from the lower pad 120 to upper pad 130, a metal rod 150 configured to connect the upper pad 130, the lower pad 120 and with the at two mechanical springs (140A and 140B) for assisting to climb stairs, a support frame 160 configured with a linear member 160A and a triangulated member 160B to support a leg of the user, at least two pre-tension setting elements configured to increase compression of the at least two mechanical springs (140A and 140B), and a sandal 180 configured to support a foot of the user. FIG.1A

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

Development of Osteoporosis estimation- device

Project sponsored by DST – DSIR (Rs 18.5 L)



Features:

Osteoporosis estimation based on change in frequency of waves through bones, Hand held device for orthopaedic surgeons and physicians and Cost effective device

File No. DSIR/PRISM/186/2020
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research

Technology Bhavan
New Mehrauli Road
New Delhi-110 016

Dated: 11.01.2022

To
The Pay & Accounts Officer
Department of Scientific & Industrial Research,
New Delhi.

Subject: "Development of Osteoporosis Estimation Device Application" – financial support under Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM) of DSIR

Sr
I am directed to convey the approval & sanction of the President of India for the above project entitled "Development of Osteoporosis Estimation Device Application" submitted by Dr. B.G. Sudarshan, Bengaluru under Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM) scheme of Department of Scientific & Industrial Research (DSIR) for PRISM support of ₹16.40 Lacs/- (Rs. Sixteen Lacs and Forty Thousand Only), out of the total project cost of Rs.18.04 Lacs/- (Rupees Eighteen Lacs and Four Thousand Only) for a duration of 14 months and ₹Rs.1.64 Lacs (Rupees One Lac Sixty Four Thousand only) to TOCIC at SPMVV, Tirupati for providing necessary assistance in execution of the project. The support of ₹16.40 Lacs/- (Rs. Sixteen Lacs and Forty Thousand Only) for project work under PRISM Grants-in-Aid is to be utilized as under. The balance expenditure will be borne by the innovator.

Sr No	Items	Proposed total expenditure	PRISM support recommended
1	R&D/Design Engineering / Consultancy charges	4.35	4.00
2	Rental charges for laboratory / workshop facilities	-	-
3	Essential equipment that cannot be taken on rent	-	-
4	Raw material / spares/consumables cost	2.40	2.15
5	Fabrication / synthesis/Development charges	8.29	7.50
6	Manpower (based on actual & not exceeding 20% of the total project cost)	-	-
7	Testing and trials	2.70	2.50
8	Travel (based on actual & not exceeding 5% of the total project cost)	0.30	0.25
9	Patent Filing (Actual fee paid to patent office)	-	-
10	Other Expenditure	-	-
	Total Cost :	18.04	16.40

2 I am also directed to convey the sanction of the President of India for the release of first instalment of ₹6.00 Lacs (Rupees Six Lacs only) to the innovator, Dr. B.G. Sudarshan, Bengaluru for the project work and ₹Rs.60,000/- (Rupees Sixty Thousand only) to TOCIC at SPMVV, Tirupati under Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM) programme of DSIR.

3 The amount of ₹6.60 Lacs (Rupees Six Lac and Sixty Thousand only) will be drawn by the Drawing and Disbursing Officer, Department of Scientific & Industrial Research (DSIR), New Delhi and will be disbursed through RTGS/NEFT to the following as per details given overleaf.

contd. on page 2

- 2 -

Name of the Beneficiary with Full Address: Dr. B.G. Sudarshan, 1094/1208 8th Cross, Ginnagar, 2nd Phase, Bangalore-560085

Beneficiaries Bank with Full Address: Kotak Mahindra Bank, R.V.C.F. Campus, 8th Mile, Mysore Road, Bengaluru, 560 059, Karnataka, KKBK00008053, 0045927010

IFSC of the Bank: KKBK00008053

Beneficiaries Account Number: 0045927010

Amount: ₹ 6.00 lacs (Rupees Six Lacs only)

Coordinator, TePP Outreach cum Cluster Innovation Centre (TOCIC), Sri Padmavathi Mahila Viswavidyalayam, Tirupati - 517502 (A.P.)

Union Bank of India, Padmavathi Nagar, M.R.Pali, Sri Padmavathi Mahila Viswavidyalayam, Tirupati - 517502 (A.P.)

IBIN: 430305

174910100003305

₹ Rs.60,000/- (Rupees Sixty Thousand only)

4 This DSIR support is subject to the terms & conditions as accepted by Dr. B.G. Sudarshan, Bengaluru. The next instalment of DSIR support would be considered for release based on the progress of the project and receipt of Statement of Expenditure (SE) and Utilisation Certificate (UC) from Dr. B.G. Sudarshan, Bengaluru and TOCIC at SPMVV, Tirupati.

5 It is certified that the provision of GFR 212(1) relating to Utilisation Certificate (UCs) does not arise for this release as this is the 1st instalment towards the activity.

6 As per Rule 211(1) of GFRs, the accounts of the Grantee shall be open to inspection by the sanctioning authority/audit whenever the Grantee is called upon to do so.

7 As per provision contained in GFR Rule 230 (B) all interest/other earnings accrued against Grants-in-aid shall be mandatorily remitted to the Ministry of Science & Technology, Govt. of India.

8 The expenditure involved will be debited against Demand No. 90 of DSIR plan (2021-22) 3425 Major Head: 60-Others (Sub-Major Head): 60-200 (Assistance to other Scientific bodies) 59-PRISM (Promoting Innovations in Individuals, Start-ups and MSMEs) 59-01-31 (Grants-in-Aid) where funds are available for the purpose.

9 This sanction has been issued under the powers delegated to this department and with the concurrence of IFD vide their diary no. 1603/JS&FA/DSIR/2021 dated 22.09.2021.

10 Sanction has been entered at SI No. 61 in the register of the grants (2021-22) maintained by the division.

Yours faithfully,
(Dr. Ramanuj Banerjee)
Scientist-F

Copy to:
1 Cash Section, DSIR – 3 copies
2 Dr. B.G. Sudarshan, 1094/1208 8th Cross, Ginnagar, 2nd Phase, Bangalore-560085
3 Director, CSIR – SPMVV, Tirupati
4 Prof. Uma Maheswari Devi, Coordinator, TePP Outreach cum Cluster Innovation Centre (TOCIC), Sri Padmavathi Mahila Viswavidyalayam, Tirupati – 517502 (A.P.)
5 IFD, DSIR
6 Director of Audit (CWSM-II), ACGR Building, IP Estate, New Delhi-110 001
7 Dr. P.K. Dutta, Scientist-F & Head PRISM, DSIR
8 Sanction Folder
9 Project File.

Yours faithfully,
(Dr. Ramanuj Banerjee)
Scientist-F

HRV estimation to detect ANS functioning

Project sponsored by DST – Nidhiprayas (Rs 7.0 L)



Features:

Variations in R-R interval estimates ANS functioning

Time & frequency domains

LF / HF ratio



Stress and Associated diseases in Bangalore Police Personnel

Project sponsored by BPRD (Rs 5.0 L)



Findings: Stress related to operational issues lower in females due to less overtime demands Read more at:

<https://www.deccanherald.com/india/karnataka/bengaluru/extra-hours-put-city-cops-2024149>

[Home](#) › [India](#) › [Karnataka](#) › [Bengaluru](#) ›

Extra hours put city cops under stress: study

भारत सरकार Government of India
गृह मंत्रालय Ministry of Home Affairs
पुलिस अनुसंधान एवं विकास ब्यूरो
BUREAU OF POLICE RESEARCH & DEVELOPMENT
फोन-EPABX: 011-2436 5009/ 2330/ 0371
फैक्स Fax No. 011-2436-2425 and 011-2436 9825

ब्लॉक-11, 3/4 तल, लोधी रोड, नई दिल्ली-110003
Block No. XI, 3rd Floor
CGO Complex, Lodhi Road
New Delhi-110 003
No. 32/12/2013/RD
दिनांक: Dated 12th June, 2013

SANCTION ORDER

Subject: Award of Research Study on, 'Stress Levels of Associated Diseases in Bangalore city police personnel' under the Non-Plan Scheme of the BPR&D.
- Regarding.

The sanction of DG, BPR&D, in consultation with IFA vide their Dy.No.480/IFA dated 11/6/2013 is hereby conveyed for incurring an expenditure not exceeding Rs. 4,95,000/- (Rupees Four lakh ninety five thousand, only) for undertaking a research study on the above mentioned subject by Dr. B.G. Sudarshan of RV College of Engineering, R.V.Vidyasiketan Post, Mysore Road, Bengaluru - 560 059. **The duration of the project is 24 (twenty four) months.**

2. The following are the objectives of the study :-

- I. To study the extent of health status abnormalities among Bangalore City Police Personnel and its distribution between the armed and the unarmed police personnel.
- II. To study the correlation with different physiological parameters as indicators of health with its associated diseases among Bangalore City Police Personnel.

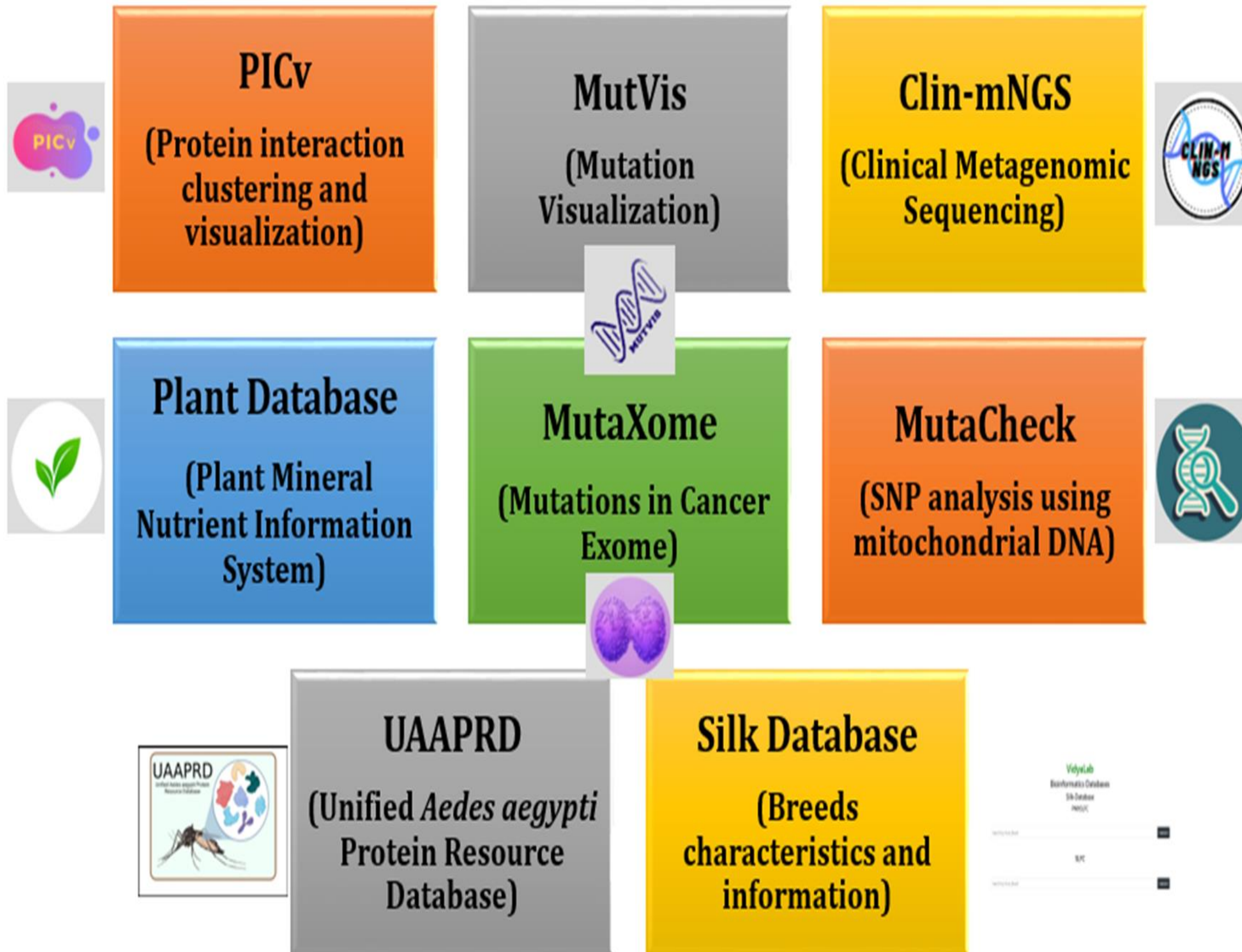
3. The amount of Rs.1,65,000/- (Rupees One lakh sixty five thousand, only) out of the approved amount of Rs.4,95,000/- (Rupees Four lakh ninety five thousand, only) as first installment is hereby released to **The Principal, R.V. College of Engineering, Bengaluru** for the commencement of the above referred research project from the sanctioned budget grant of the BPR&D during the current year 2013-14. The RTGS information for the above is as under :-

Beneficiaries Name	Principal, R.V. College of Engineering, Bengaluru
Bank Name and Branch	ING - Vysya Bank, R.V. College of Engineering Campus, Mysore Road, Bengaluru - 59
A/c No.	136010112055
IFSC Code No.	VYSA0001360

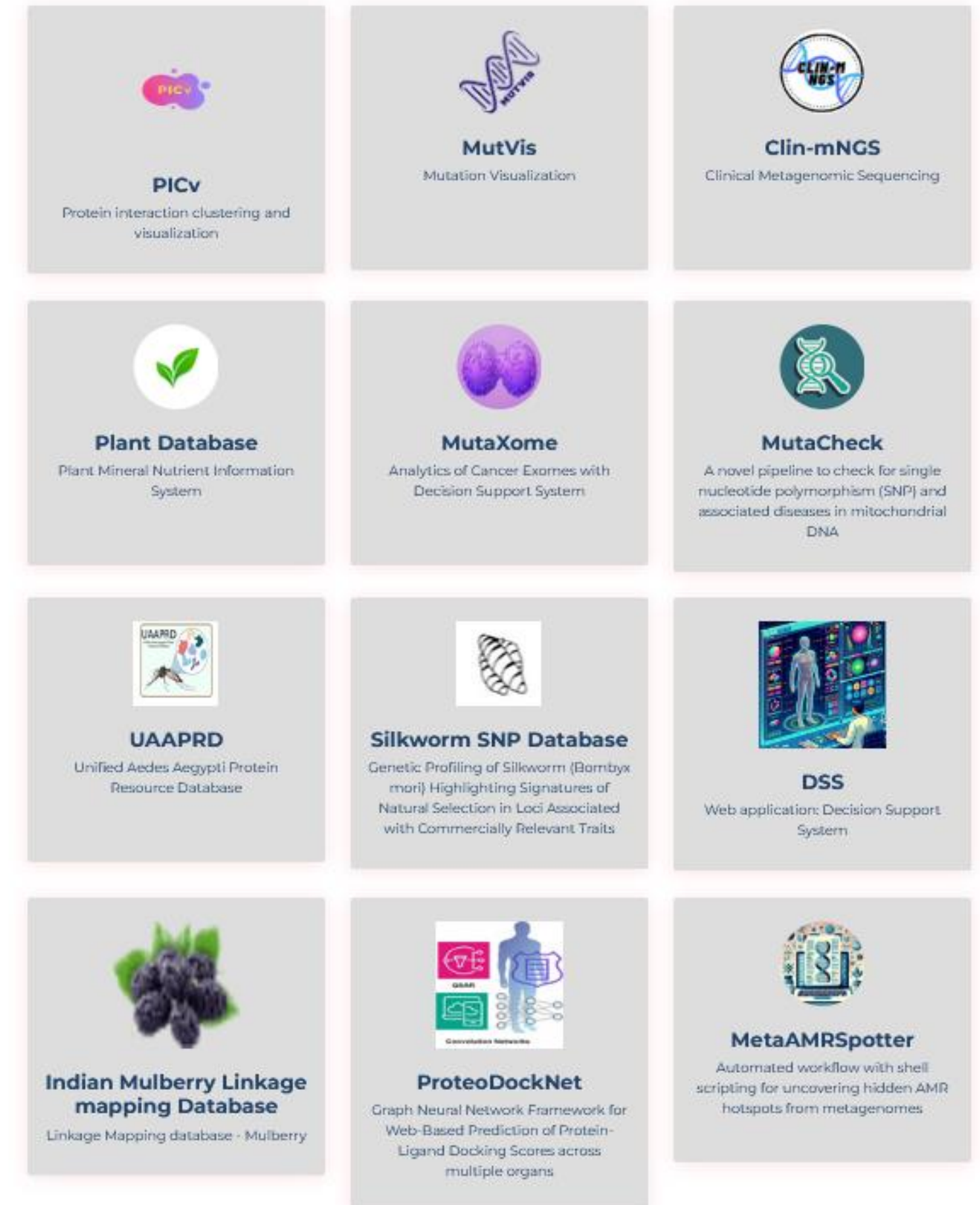
4. The balance amount of Rs.3,30,000/- (Rupees Three lakh thirty thousand, only) will be released in two equal installments. The second installment will be paid subject to the satisfaction of the Director General, BPR&D regarding the progress of the project and the final installment will be paid only after satisfactory completion of the project and submission of the project report and utilization certificate to the BPR&D.

5. The sanction is further subject to the following conditions :-

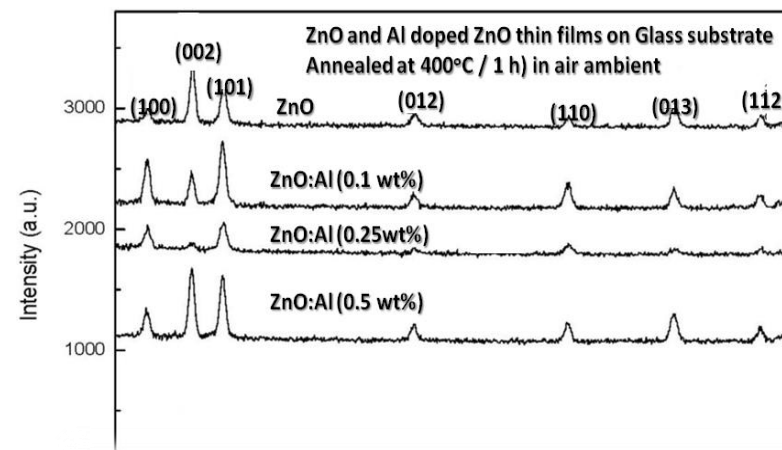
TOOLS & DATABASES



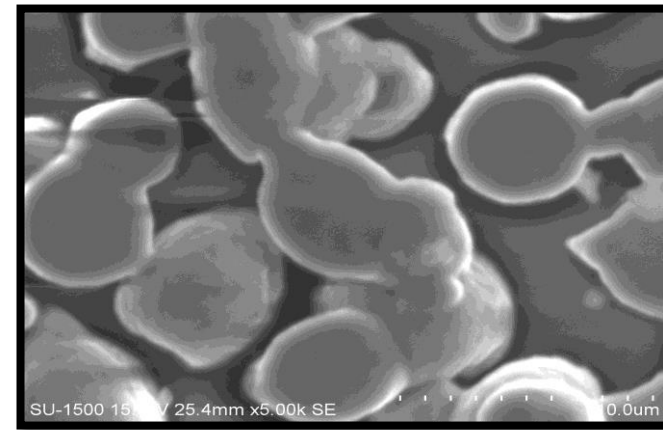
Tools & Databases



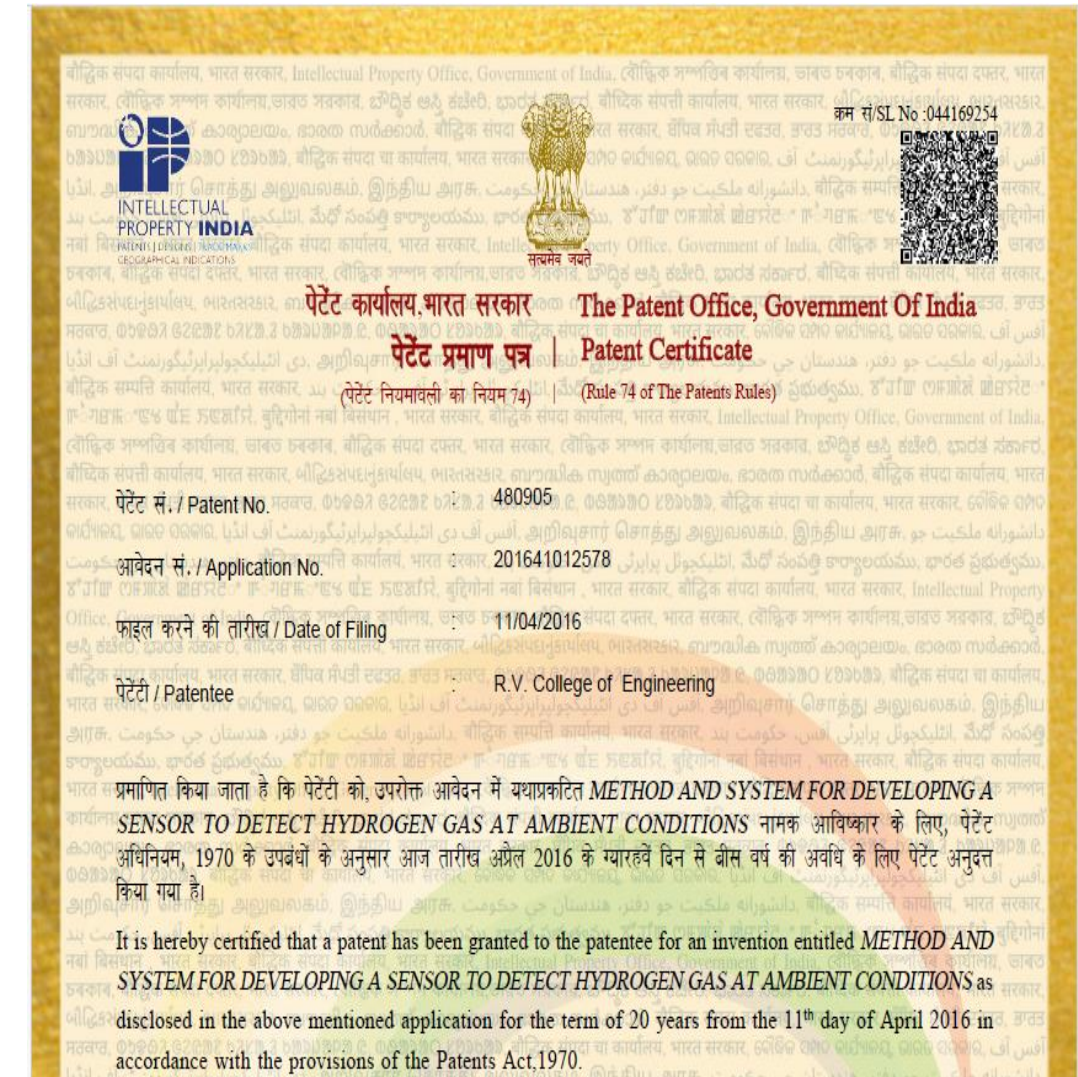
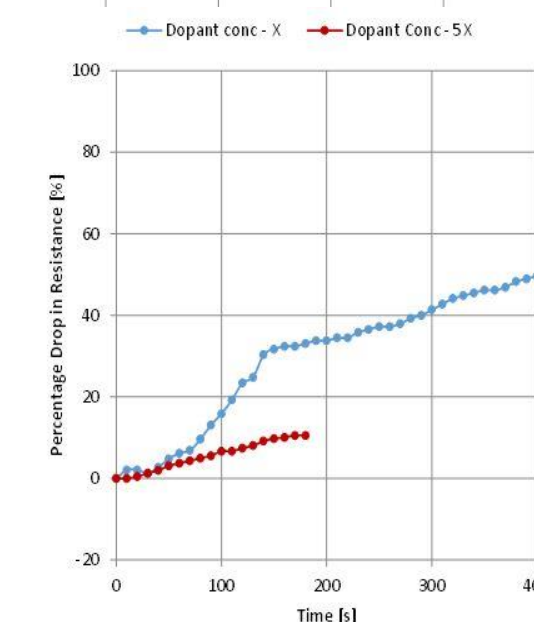
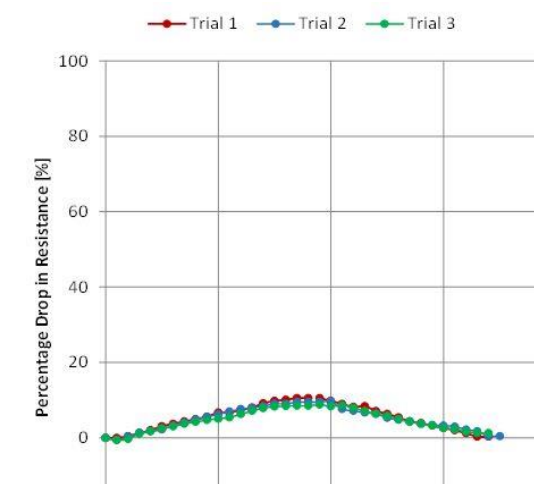
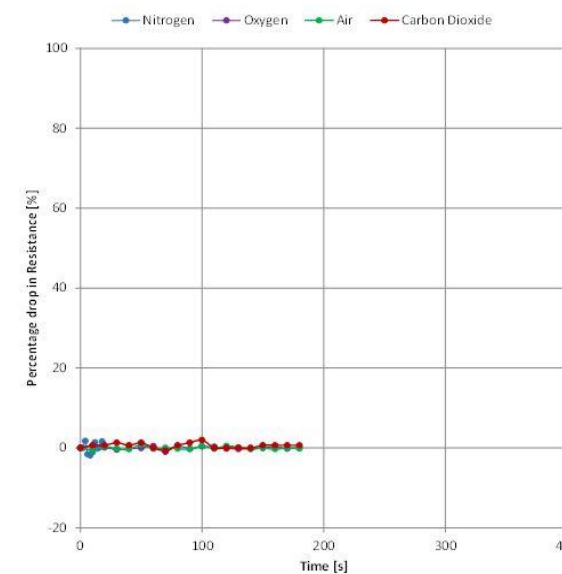
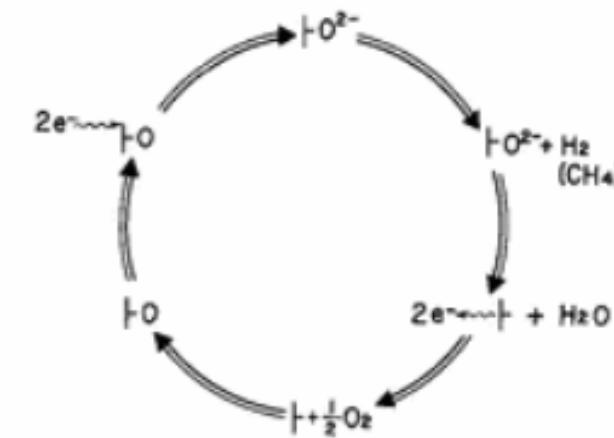
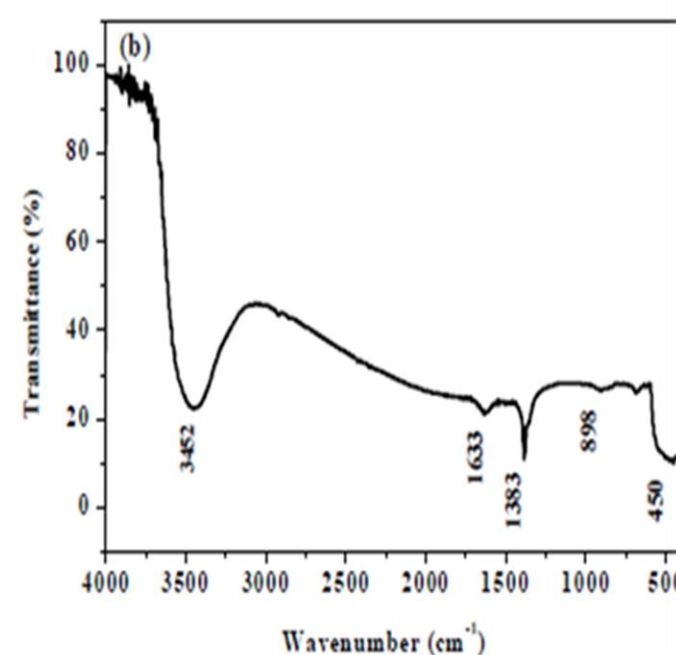
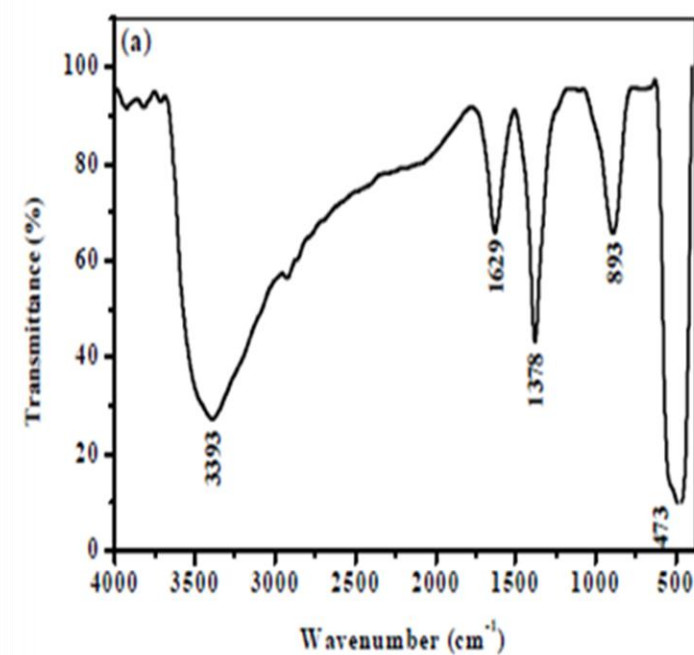
Method and system for developing a sensor to detect hydrogen gas at ambient conditions



(a) Pure ZnO film annealed at 400C for 1h



(b) ZnO:Al (0.5wt%) film annealed at 400C for 1h



Metal oxide (ZnO) based thin film sensor Chemical Solution Deposition method Thin film was developed by spin coating; multiple layers were coated Resistance of the sensor drops when it comes in contact with H_2 gas Drop in resistance is measured using multimeter

Regeneration time – 5 minutes

% drop in resistance : 11

Insensitive to other gases (carbon dioxide, nitrogen, oxygen and air)

Enhanced sensitivity due to dopant addition; % drop increase to 50

Inventors: Ujwal Shreenag M, Akshay

Kulkarni, Abhinav Bajaj, Aditya Kulal

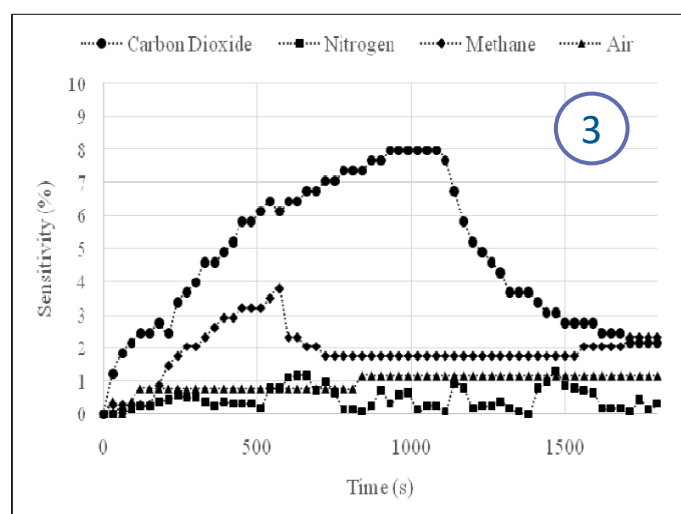
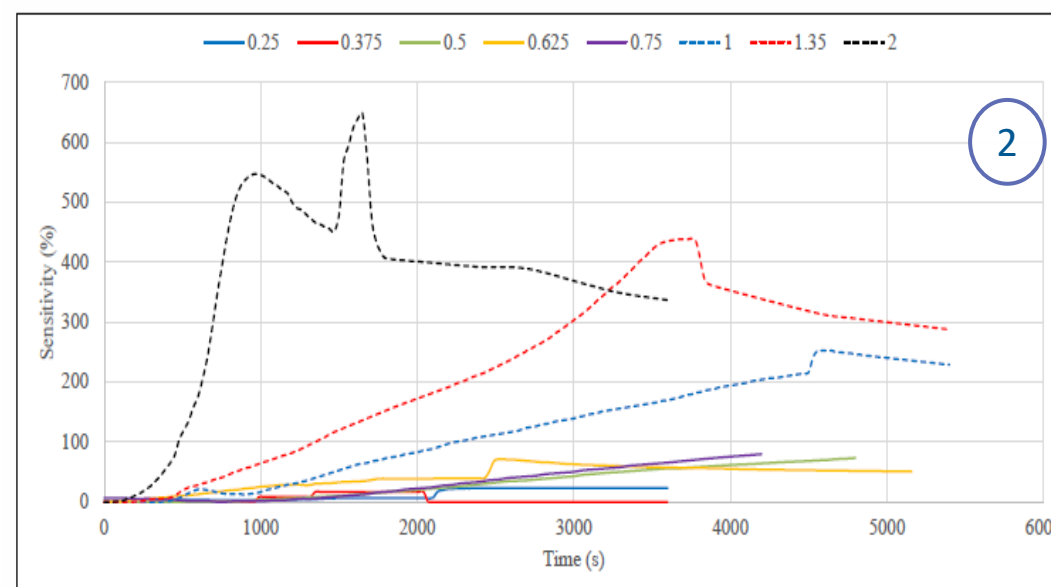
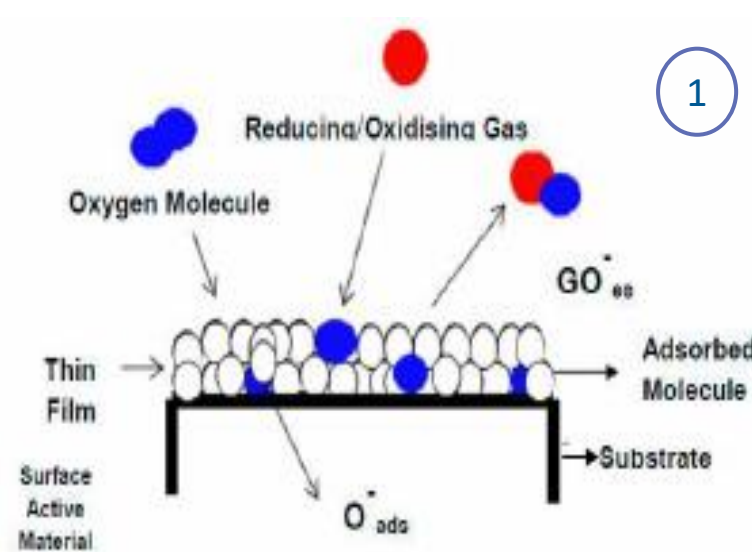
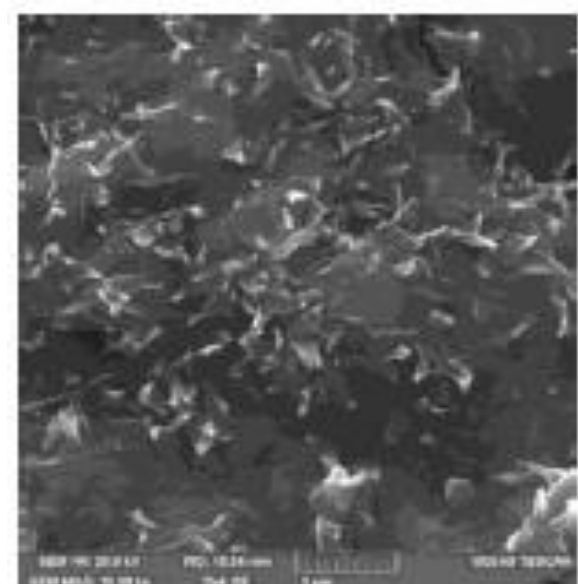
Filing Date: 11.04.2016

Patent Published: 13.10.2017

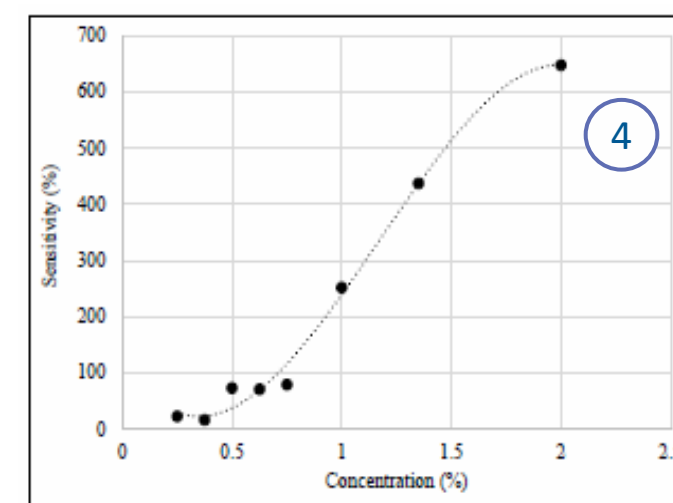
Granted on: 12.12.2023

Patent Number: 480905

Method and system to develop a polymer - hydrogel - metal oxide composite based sensor to detect and quantify hydrogen gas



- 1: Sensing Mechanism
- 2: Sensitivity to Hydrogen
- 3: Sensitivity to other gases
- 4: Calibration Curve



Components (Total weight: around 75g)

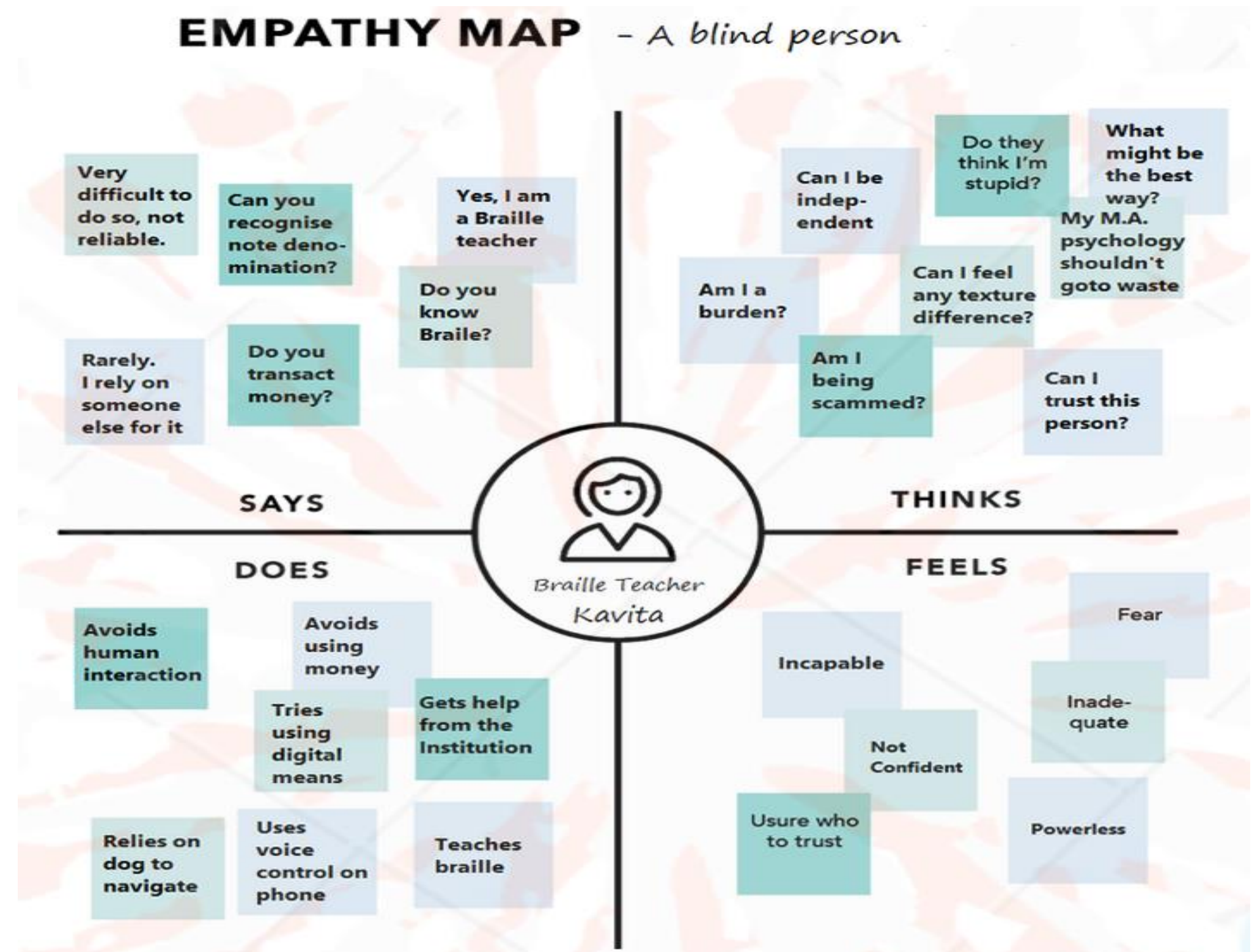
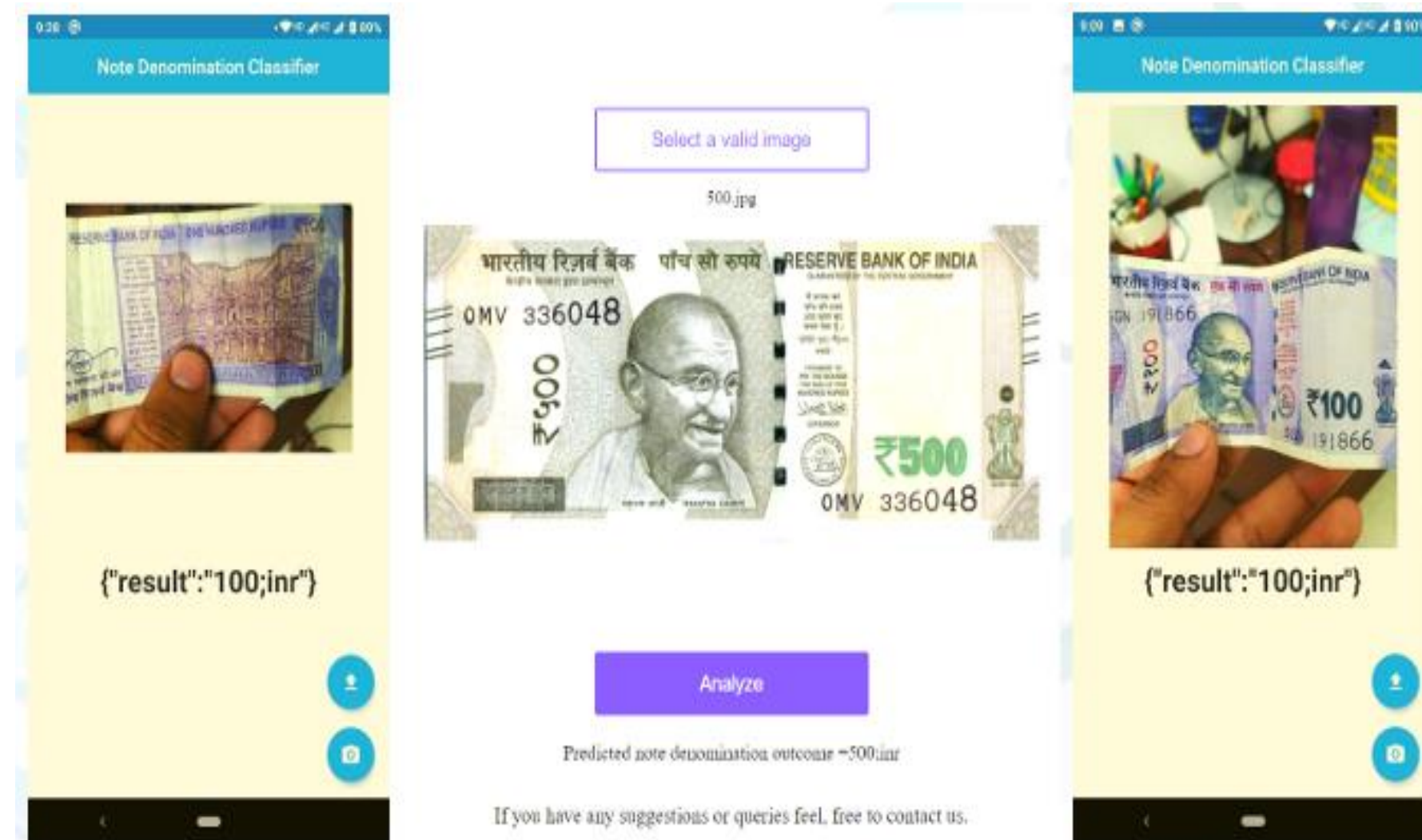
- 1: Raw Sensor- Weight: 5g | Volume: 2cm x 2cm x 0.3cm
- 2: Conditioning board-Weight: 6g | Volume: 4cm x 2.5cm x 1cm
- 3: Node MCU (for data transmission)-Weight: 10g | Volume: 3cm x 5.5cm x 1cm
- 4: 5V battery-Weight: 35g | Volume: 2.5cm x 1.5cm x 4.5cm
- 5: Associated wiring -Weight: 20g

Inventors: Ujwal Shreenag M, Lourdu Antony Raj, Shripathi ramakrishnan, Maitri Uppaluri, A R Phani

Granted on: 05.06.2020

Patent Number: 338004

Bank note denomination detection for blind



A case study detailing the application of design thinking principles to approach and develop solutions for the visually challenged to recognize the denomination of Indian currencies.

PHYTOfilFOG- A quench towards clean India initiative for Atma-nirbhar Bharat



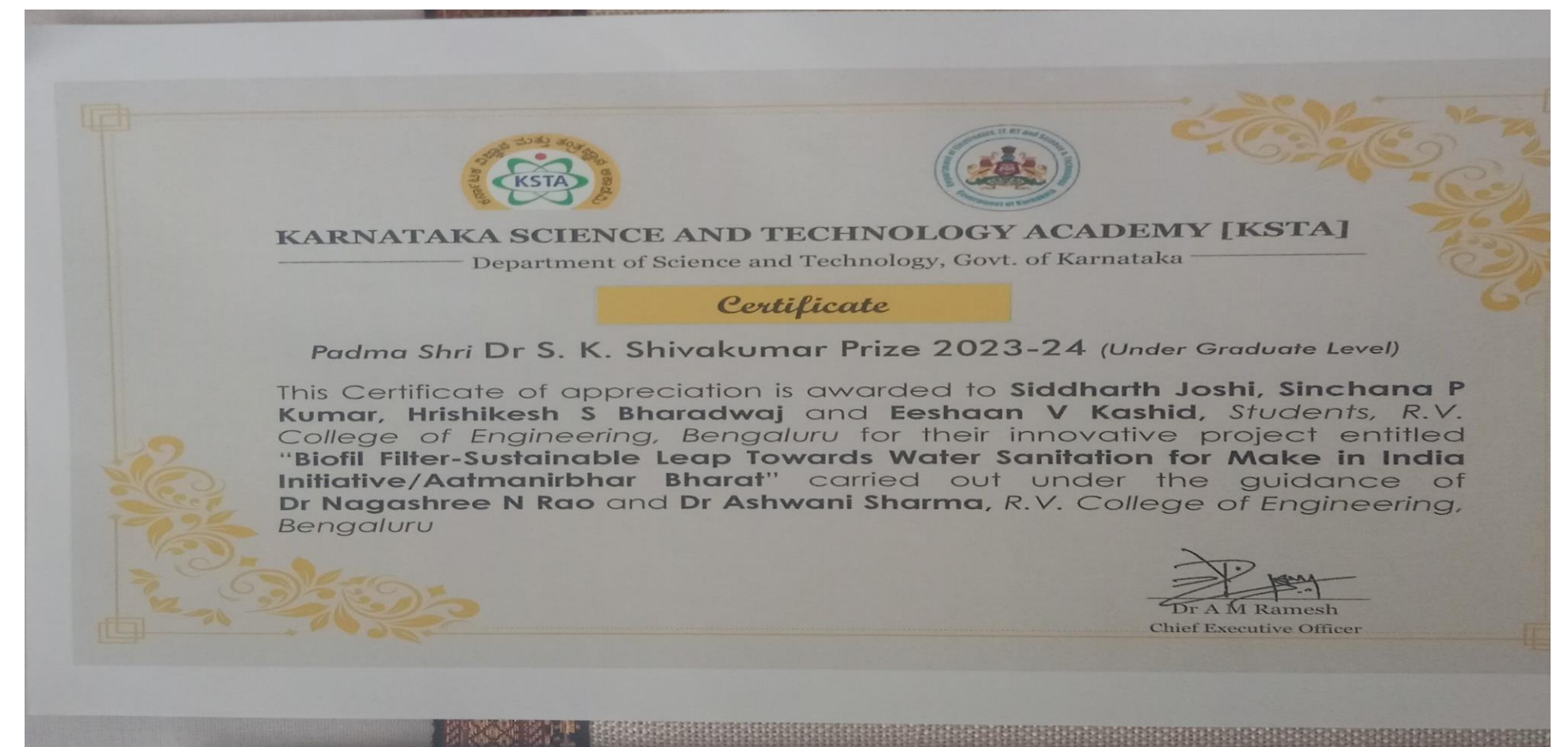
Phyto fibre Water + oil emulsion Phyto fibre adsorbs only oil

Carded Phyto fibre

Yarned phyto fiber

Spun Phyto fibre mat

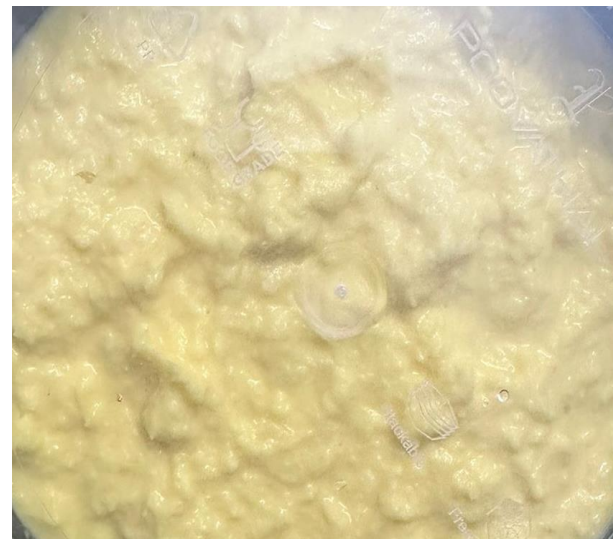
PhytofilFOG



SukhaDahiSukh : Nutritionally composite food to food fortified dahi with enhanced shelf life for malnourished population and insurgencies



Nutrient food



Matrix



Food to food Fortified curd Powder



(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/06/2023

(21) Application No.202341040377 A

(43) Publication Date : 07/07/2023

(54) Title of the invention : A Preparation Method of Fruit and Vegetable Enriched Instant Corn Curd Spread Powder

(71)Name of Applicant :

1)R. V. College of Engineering

Address of Applicant :Mysore Road, R.V. Vidyaniketan post, Bangalore- 560059, Karnataka, India. Bengaluru -----

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Nagashree N Rao

Address of Applicant :#78, Sathyanarayana layout, 3rd road, 4th stage, West of Choard Road, Bashweshwarnagar, Bangalore: 560079, Karnataka, India Bengaluru -----

2)Ashwani Sharma

Address of Applicant :#002, H M Residency, 268, Banashankari, 5th stage, Near National Public School, banashankari Bengaluru 560061 Karnataka, India Bengaluru -----

3)Ravindra S Kulkarni

Address of Applicant :B-25, Patterns,Good Earth Malhar Behind Rajarajeshwari Medical Collage Near Kambipura,Bangalore: 560074 Karnataka, India Bengaluru -----

4)M Rajeswari

Address of Applicant :1215, Manjunatha swamy Nilaya, 2C Main, 9th Cross, 7th block, near Vittala eye international hospital, Hosakerehalli, BSK 3 Stage, Bengaluru-560085, Karnataka, India Bengaluru -----

5)A V Narayan

Address of Applicant :Flat-005, Achuth Paradise,27 Cross, Rajarajeshwarinagar, Ideal Homes Township, Kenchanahalli, Bengaluru-560098, Karnataka, India Bengaluru -----

6)K N Subramanya

Address of Applicant :#47, KASHYAPA, 1st main, 6th Cross, Near Nagarbhavi circle, Nagarbhavi, Bengaluru, 560072, Karnataka, India. Bengaluru -----

(51) International classification :A23F 030600, A23L 034000, A23L 190000, A23L 310000, G06Q 990000

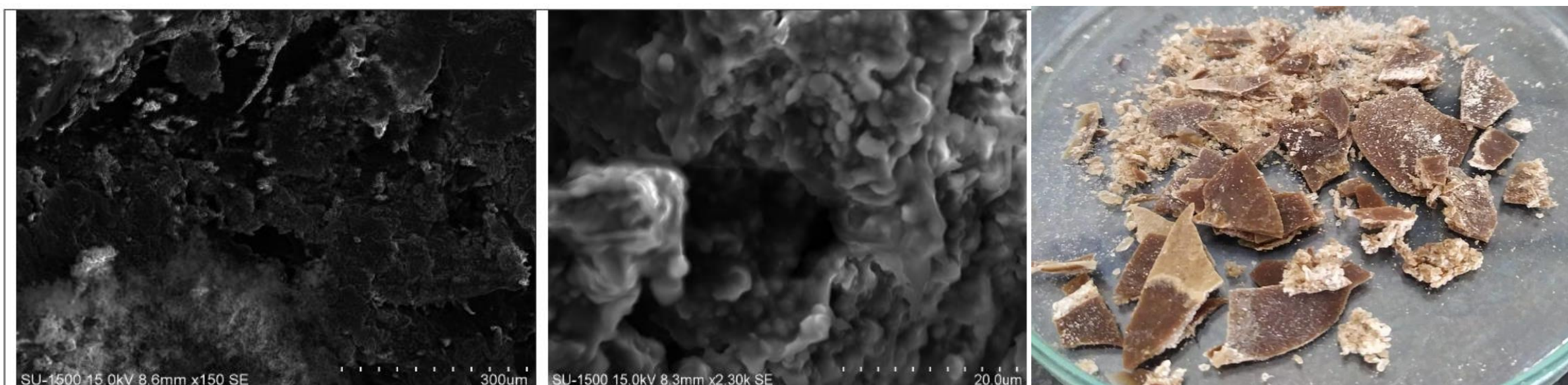
(86) International Application No Filing Date :PCT// :01/01/1900

(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

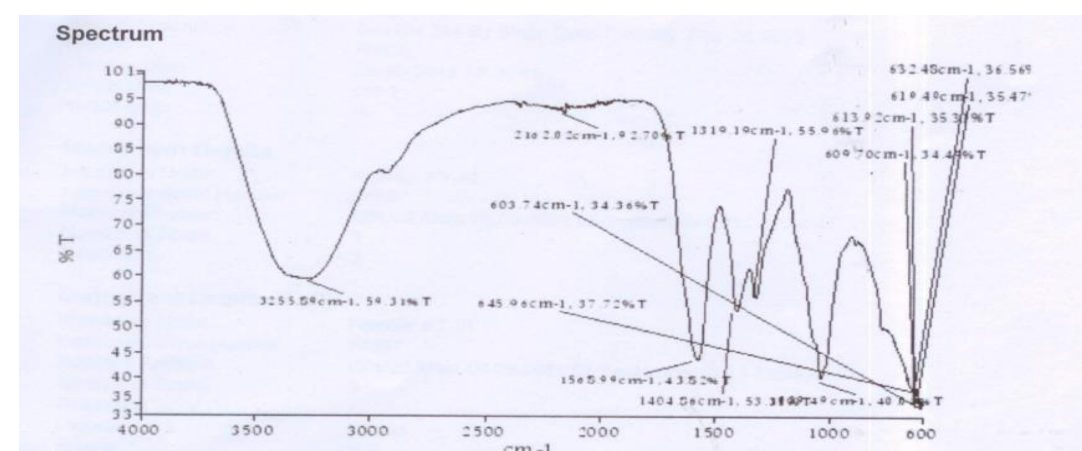
METHOD AND SYSTEM FOR PRODUCING XYLOOLIGOSACCHARIDES FROM DRIED ORANGE PEELS



The electron microscope picture of enzyme hydrolysed Xylan pellets after the 8% alkaline treatment.



Biological testing for antioxidant and anti cancerous properties



FT-IR spectra of the xylan

INTELLECTUAL PROPERTY INDIA
एकनव/पाटेंट्स/अधिकार/डिजाइन्स/ब्रान्ड ट्रेडमार्क/भौगोलिक संकेत/भौगोलिक संकेत

भारत सरकार
GOVERNMENT OF INDIA

एकनव कार्यालय / THE PATENT OFFICE
बौद्धिक सम्पदा भवन / I.P.O. BUILDING
जी.एस.टी. रोड, गिन्दी, चेन्नई-600032
दूरभाष/ Tel. No.: (091)(044)22502081-84
फैक्स/ Fax: 044 22502066
Email/ई मेल : Chennai-patent@ipc.in
वेबसाइट/Website: <http://ipindia.nic.in>

सं. \ No. 201741011399

दिनांक \ Dated the 10/06/2022

सेवा में, \ To :
Address of Service:- Omprakash S.N (IN/PA 1095) Oms Patent Services Pvt. Ltd. #2788, 16 Cross, 8B Main, Near Saraswathi Hospital, Banashankari II stage, Bengaluru - 560 070, Karnataka, India Mobile: +91- 94483 56142 Landline: 080-26761507, 26792089, Fax : 080-6688 6224
Email- omprakash@omspatentservices.com
Email Id- omprakash@omspatentservices.com,contact@omspatentservices.com

विषय :- पेटेंट आवेदन संख्या 201741011399 के संबंध में अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्ट्रार ने प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 201741011399

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 22/04/2022 को हुई सुनवाई] के उपरान्त एनडुमप पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 10/06/2022 को पेटेंट रजिस्ट्रार ने 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 22/04/2022] a patent is hereby granted and recorded in the Register of Patents on the 10/06/2022. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No : 398942
आवेदक का नाम \ Name Of Applicant : R.V. College of Engineering
पेटेंट दिनांक \ Date of Patent : 30/03/2017
पूर्वता तिथि \ Priority Date : 30/03/2017
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filing date of Request for examination : 12/07/2018
शीर्षक \ Title : METHOD AND SYSTEM FOR PRODUCING XYLOOLIGOSACCHARIDES FROM DRIED ORANGE PEELS
दावों की संख्या \ Number of claims : 02

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 तथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 तथा 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.

Dr. Bhanumathi R.
(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :
1. संशोधित नवीकरण शुल्क हेतु कृपया महानिर्देशक पेटेंट, अधिकल्प 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 कॉपी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

Patent Number- 398942.

Inventor(s) 1.Praveen Kumar Gupta

The present disclosure relates generally to the field of synthesis of xylooligosaccharides. More specifically, the disclosure is directed to a process of production of xylooligosaccharides from peels of orange fruit.