Mahatma Education Society's

Pillai HOC College of Engineering and Technology

**Dist. Raigad Via Panvel, Rasayani, Tal. Khalapur
410207, MH, India**

Institution's Innovation Council

Report for Academic Year 2022-23

INSTITUTION'S INNOVATION COUNCIL
(Ministry of Education Initiative)

A.

- **Vision of IIC established at the Institute**

  To be a fountainhead of innovative ideas to meet the mission of entrepreneurship and startups and accelerate the efforts of skilling and up skilling for employment generation

- **Mission of IIC established at the Institute**
  To develop research support and cultivate an active Start-up ecosystemin PHCET is resulting in innovation and entrepreneurship driven employment and economic growth.

- **Journey of IIC established at the Institute:** PHCET has established Institution's Innovation Council (IIC) as per the guidelines of „MoE"s Innovation Cell (MIC)" in the academic year 2020-21. The initiative was to create a vibrant local innovation ecosystem, start-up supporting mechanism, establish function ecosystem for scouting ideas and pre-incubation of ideas and to develop better cognitive ability for technology students. PHCET, IIC is actively involved in organizing and conducting various seminars, workshops, Idea competitions, Hackathon for school childrens etc. for its students and faculties.

- **Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.**
  PHCET has established IIC comprising members from Industry and Interdisciplinary departments. Each member contributes to fulfil Vision and Mission of IIC established at the institute conducting expert webinars, Workshops, Field visits, Add-on programs for students and faculty of PHCET.

B. **Brief mention of key functionaries at the IIC Institute**
- President :**Dr. R. C. Prasad**
- Vice President: **Dr. Mansi Subhedar**
- Convener: **Dr. G. V. Patil**
- Coordinators etc. : Refer Below Table

C. Portfolio/graphical/Tabular representation of Resource strength (human capital and Physical capital) of the IIC institution

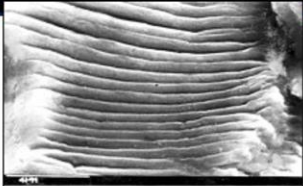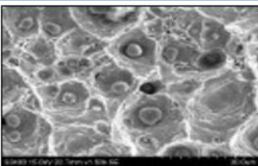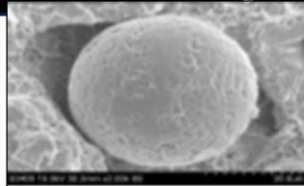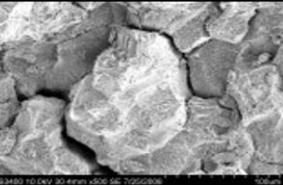| Sr. No.	Name of Member	Member Type (Teaching/ Non-teaching / External Expert)	Key Role/ Position assigned in IIC
01	Dr J. W. Bakal	Teaching	Head of the institution
02	Dr R. C. Prasad	Teaching	President
03	Dr G. V. Patil	Teaching	Convener
04	Dr Mansi Subhedar	Teaching	Vice President
05	Ms. Munawira Kotyad	Teaching	Entrepreneur
06	Dr. B. K. Sarkar	Teaching	IPR Activity Coordinator
07	Mr. Raju Narwade	Teaching	Internship Activity Coordinator
08	Dr M.D. Nadar	Teaching	Innovation Activity Coordinator
09	Dr. G.R. Patil	Teaching	ARIIA Coordinator
10	Dr. Shilpa Kewate	Teaching	NISP coordinator
11	Dr. Manvendra Vashishtha	Teaching	Member
12	Dr. Divya Chirayel	Teaching	NIRF Coordinator
13	Mr. Karthik Nagarajan	Teaching	Social Media Coordinator
14	Dr. Nareshkumar Harale	External	Industry Expert
15	Mr. Vikaykumar Shivpuje	External	Industry Expert
16	Mr. M. V. Rajashekar	External	Industry Expert
17	Harsh Shah	Student	Start-up Coordinator
18	Simran Surve	Student	Member
19	Harsh patil	Student	IPR Coordinator
20	Vedant Sawant	Student	Internship Coordinator
21	Anjali Sharma	Student	Internship Coordinator
22	Joseph K. Thomas	Student	Innovation Activity Coordinator
23	R S Shinjo	Student	Social Media Coordinator

- Total No. of IIC Members: **23**
- Total No. of IAs: **3**

- Total No. of faculty Mentors From Portal: **13**
- Pre-Incubation Units, If any: **Yes**
- Incubation Units, If any: **Yes**
- IP Facilitation Unit, If any: **Yes**

D. **Highlight Facilities, Infrastructure of Pre-Incubation & Incubation kindand Student bodies/clubs engaged in promotion of Innovation and Entrepreneurship in the campus.**

PHCET has dedicated Pre-Incubation & Incubation cell with following facilities:

- Software Lab
  Software lab consists of 18 no of PC"s, where students can research and develop projects, several no of software are used. Solid Works, Java net beans, Android SDK, Matlab, Kill, Arduino, etc. Also many software's are provided as per the project need.

- 3D Printing Facility in Software Lab (Felix 3.0 3d printer)

- Facility used for rapid prototyping and fast processing
  Ultimaker+ Extended Pro
  3D Printing, also known as additive manufacturing, refers to various processes that synthesize a 3 dimensional object. In 3D printing, successive layers of material are formed under computer control to create an object. A 3D printer is a type of industrial robot.

- Component Library
  This is the place where number of resources is incubated to process on. This facility is made with the intention of making maximum resources available to work on. Students can borrow these resources to learn and work on. Library contains resources like Microcontrollers, sensors, actuators, power supply, tools and equipment and many more.

- Workshop Facility
  Research lab has dedicated workshop facility or prototyping and fabrication. Major useful tools and equipment are available with the proper guidance to use.

- Laser Cutting and Assembly Project
  Laser cutting is a technology that uses a laser to cut materials, and is typically used for industrial manufacturing applications. This facility is provided for rapid prototype Designing, Assembly and manufacturing, Testing of pilot design and project based learning.

E. Highlight Achievements (Narrative/Graphical/tabular representation)
  - Number and Different types of I&E and IPR activities Conducted :

Quarter I

Name of the Activity	Quarter	Activity Details	Start Date	End date
Rethinking Engineering Education inline with NEP 2020 and 21 st Century Skills	I	Rethinking Engineering Education inline with NEP 2020 and 21 st Century Skills	24/1/23	24/1/23
Celebration of Mathematics Day "Happy Mathematics Day"	I	Celebration of Mathematics Day "Happy Mathematics Day"	22/12/22	22/12/22
Digital Circuits and Microprocessors sponsored by Wadhwani Electronics Laboratory (WEL),	I	Digital Circuits and Microprocessors sponsored by Wadhwani Electronics Laboratory (WEL),	28/11/22	2-12-22

Quarter II

Name of the Activity	Quarter	Activity Details	Start Date	End date
Workshop on Public speaking	II	Various topics given to students to showcase their entrpnurial skills in front of public	24/1/23	24/1/23
Scope of engineering graduates as Techno-managers	II	Scope of engineering graduates as Techno-managers	28/1/23	28/1/23
One day Hands on workshop on robotics	II	The workshop was conducted for on manually controlled robots and automatic robots. Speaker of the workshop was Prof. Mithun G Nair, Department of Electronics and Computer Science. Total 40 Students attended this workshop	25/1/23	25/1/23

Mahatma Education Society's
Pillai HOC College of Engineering and Technology
Dist. Raigad Via Panvel, Rasayani, Tal. Khalapur
410207, MH, India
Tel:02192-669000/01/02/03

PHCET
PILLAI HOC COLLEGE OF
ENGINEERING & TECHNOLOGY

INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education Initiative)

Session on Educational options students who want to study abroad	II	Students learned about various paths and options available to study in abroad along with various government schemes available for them	28/2/23	28/2/23
One day Hands-on Workshop on Arduino Programming	II	To study basics of arduino programming and boards	6th March 2023	6th March 2023
Seminar on "Intellectual Property Rights and Patenting"	II	To learn about how IPR provides total control over a new innovation and its creator. To learn process of patent filling	6th October 2022	6th October 2022
Two Days handson workshop on IOT in Wireless Network	II	To create awarness about various IOT devices and interfacing in real world wireless networks	15 March2023	16 March2023
How to implement DESIGN THINKING in STARTUP	II	To motivate and guide students on applicatin of concept of design thinking in enterpreuners and Startups	July28 , 2022.	July28 , 2022.
Webinar on Design of Solar Photovoltaic System	II	To study the basics and design of photovoltaic systems for various applications for domestic purpose	October 1, 2022	October 1, 2022

Quarter III

Name of the Activity	Quarter	Activity Details	Start Date	End date
Webinar on"Electrical Engineers: Expectations and opportunities"	III	To make awareness about the expectation of industry from graduates and opportunities in various sectors.	13th August, 2022.	13th August, 2022.
Project Competition	III	To provide a platform to the students to express their innovations and ideas and their implementation with outcomes	11thApril, 2023	11thApril, 2023
3-day national level hackathon	III		March 16,2023	March 18,2023

Workshop ob PCB Design and Fabrication	III	To learn the various design software and fabrication of PCB for particular design product.	March 17,2023	March 17,2023
Python Project Competition	III	To design various systems using Python open source platform	April 13,2023	April 13,2023
Intercollegiate project compettion	III	To provide a platform to the students to express their innovations and ideas and their implementation with outcomes	May 25,2023	May 25,2023

Quarter IV

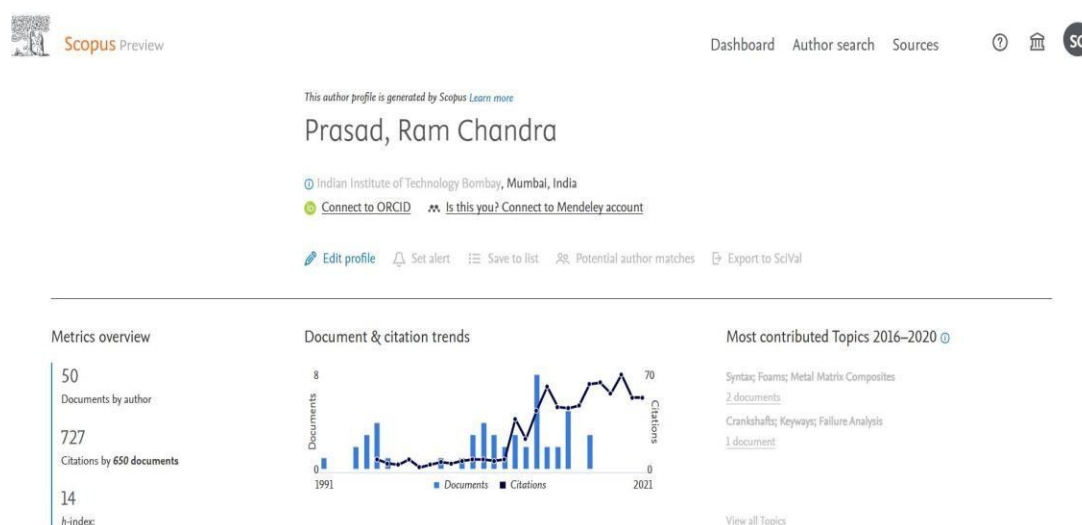| Name of the Activity	Quarter	Activity Details	Start Date	End date
International Olympiad	IV	An Expert talk on Forging and Simulation techniques	June 9,2023	June 9,2023
Development Mela	IV	The event was organized to bring together developers, programmers, and software Engineers	March 10,2023	March 10,2023
THE ART OF UI/UX-DESIGNING THE FUTURE	IV	To design various pages using UI/UX tools.	March 13,2023	March 13,2023
Expert Talk on "Cyber Security & Social Media Hacking"	IV	An Expert talk on Cyber security laws and Social Media Hacking Concept	March 2,2023	March 2,2023

- No. of student"s & faculty ideas generated: **27**
- No. of student"s & faculty Innovation/prototypes developed: **23**
- No. of IPs generated, published and granted: **19 (FER Generated)**
- No. of Student & Faculty Start-ups/Ventures established : **In Process**
- Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus: **10 Lakh**
- Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR : **8 Lakhs**
- No. of Technology Transfer and Commercialization happened: 02

F. Highlight few best IIC Faculty/Student members and their achievements/ Rewarded for the innovations at different forum

    a. **Dr. R. C. Prasad:** Dr. R.C. Prasad currently a Professor of Department of Mechanical Engineering and Chairman IIC at PHCET Rasayani is a

former HAG Professor from IIT Bombay. He is a distinguished alumnus of BIT Sindri and completed MTech from IIT Madras and PhD from IISc Bangalore. He has more than 45 years" experience in Teaching, Research & Consultancy and had been an Independent Director at M/s Sanghvi Forging at Vadodara for more than 5 years. Currently he is a Margdarshak of AICTE. He has conducted more than

25 Conferences / Workshops and delivered more than 30 Keynote lectures besides editing a book on "Composites: Science & Technology.He has guided more than 50 MTech & PhD Dissertations and published papers with 727 citations & h-index 14 as given below:
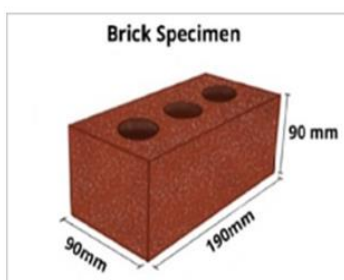

b. **Dr. M. D. Nadar:** Graduated, post graduated and doctorate in the field of Mechanical Engineering and specialized in the area of industrial Engineering. I had 4 years Industry experience and I have worked in the area of teaching since 1991 and research work since 2010. I have guided more than 50+ under graduate students and guided more than 25+ Post graduate students final year projects and I have been selected for best research work by Mumbai University, I have coordinated many faculty development program institute level, national level sponsored by remote center by IIT-Mumbai, AICTE Atal Academy FDP Program.

Mahatma Education Society's
Pillai HOC College of Engineering and Technology
Dist. Raigad Via Panvel, Rasayani, Tal. Khalapur
410207, MH, India
Tel:02192-669000/01/02/03

PHCET
PILLAI HOC COLLEGE OF
ENGINEERING & TECHNOLOGY

INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education Initiative)

G. Highlight selected best Innovations & images with mention ofinventor/innovation name:

Product Developed

Smart Construction Safety Helmet
(Patent App. No: 202121043251)

Manufactured and Engineered Truly fly-ash
Aggregate with Light in weight (METAL)
(Patent App. No: 202221065222)

Brick Specimen

90 mm

90mm   190mm

Bamboo-reinforced manhole cover
(Patent App. No: 2021210433843)

Steel fibre reinforced sustainable
composite hollow block
(Patent App. No: 202121053767)

Eco-friendly Poly-propylene paver block
with anti-skid film
***(Patent App No: 202121046356**
(Patent No: 432844)

H. Highlight selected start-ups established by students/faculties with mention offounder/cofounder name:

Mr. Gourav Sarkar
Co-Founder and CEO | (M) +91 9987549293

Friction Innovative Education LLP
217, Skylark, Sakal Bhavan Road, Sector 11, Opp. BP Marine Academy, CBD Belapur, Navi Mumbai 400614

I. **List if any break through Innovations / Technology Developed at the institute(2-3 technology with 2-3 lines about technology and innovation:**

Our invention *Automatic Air Fill in Bike, Scooty and Car Tyres* is a Point of this programmable research show that a drop in Tyre pressure by only a couple of PSI can bring about the decrease mileage. Our invention and effectively carries out the utilization of a versatile blower that will supply air to every one of the four Tyres through hoses and a revolving joint fixed between the wheel axle and wheel center point at each wheel. The revolving joints viably permit air to be directed to the Tyres without the tangling of hoses (max 60 RPM). A programmed vacuum apparatus for vehicle wheel Tyres, particularly those without tubes, uses an air cylinder with a chamber fixed on an edge which empowers its cylinder plate to contact and be moved by the inside Tyre surface progressively by the wheel pivot compacting air into the Tyre chamber until the pressing factor develops adequate and the cylinder pole no longer contacts the inside Tyre surface. Then, at that point a cylinder plate of a pressing factor check cylinder is lifted up making an electric association with cut the power from the blower and the cylinder pole recuperates its unique position.

J. Participation of IIC-institute in various programs of Central and Stage Govt.Highlighting specially for the schemes or programs
   - ARIIA – Participation 151-300 rank
   - NISP Adoption status - Trained Faculty, Policy Formulation, PolicyImplementation
   - Smart India Hackathon etc.
   - Yukti- Innovation
   - KAPILA Program
   - UNNAT BHARAT ABHIYAN
   - AICTE IDEA Lab

K. Detail of Social Media & Connections of IIC
   institute Website:
   https://www.facebook.com/pillaihoccollege
   Website:
   https://www.instagram.com/pillaihoccollege

ISRS -President 's Appericiation Medal For Contribution to the Society-2022 at HICC , Hydrabad during ISRS ISG SYMPOSIUM 2022

L-R :
▶ Lt General Girish Kumar, Ex. Surveyor General Survey of India
▶ Dr.Prakash Chauhan President ISRS Director ,NRSC ISRO
▶ Dr.M Ravichandran, Secretary, Ministry of Earth Sciences
▶ Dr.Raj Kumar , President. ISG
▶ Dr. Shailesh Nayak Director National Institute of Advanced Studies

L. Testimonials from IIC members and external about IIC institute and IIC of MoE‟s Innovation Cell:

1. **Dr. Mansi Subhedar:** I am serving as vice president for IIC, PHCET. PHCET has constituted IIC to offer support to the students and faculty to nurture innovation and startup ecosystem. IIC team at PHCET has also formulated PHCET NISP in accordance with framework provided by MoE innovation cell. PHCET IIC is promoting student driven innovations by providing a platform to nurture students ideas and mentor them to take those ideas transformed into product design. Being a IPR coordinator, I would like to mention that involved many students are actively involved in prototype design at various stages. It is essential to make them aware about copyrights, trademarks and patents filing procedures and technology commercialisation guidelines. IIC has conducted several webinars on IPR, Entrepreneurship and innovation theme and have planned symposiums and design contest to promote, mentor and nurture a research, innovation and entrepreneurial potential amongst students and faculty. Implementation of NISP at various at stages will certainly help internal and external stakeholders to drive and ensure development at all fronts.

2. **Mr. Nandakishore Nemade:** I am CEO, Nikhil comforts, Mulund Mumbai and Industry expert IIC, PHCET. PHCET has vibrant innovation and startup ecosystem. PHCET IIC is promoting student driven innovations by providing a platform to nurture students ideas and mentor them to take those ideas transformed into product design.

M. Few Images of Various Programs conducted by PHCET, IIC:

Application of
Remote Sensing and Geographic Information System
for Sustainable Development in Engineering

13th – 14th January 2020

Prevention

Addressing residual risk

Preparing

Responding

Disaster Risk Management

Recovering

Capacity Building in Space-Based Disaster Management Support and Risk Reduction for Maharashtra State (Basic Course)

Sponsored by
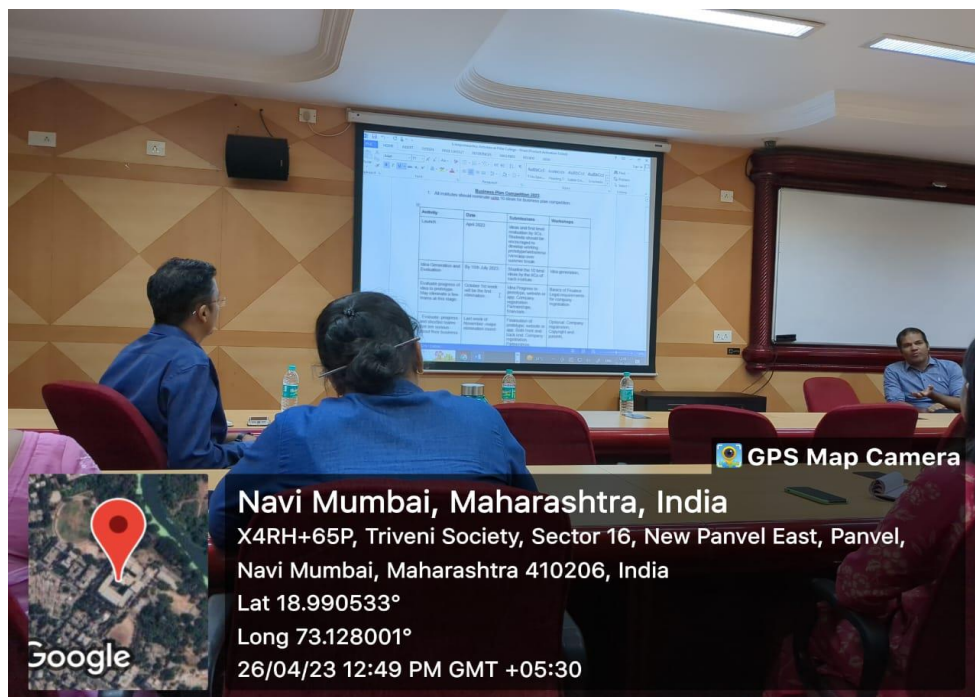
इसरो ISRO

ISRO Disaster Management Support Programme (DMSP)

Dates for Programme
20th March - 25th March, 2023

Organized by

MAHATMA EDUCATION SOCIETY'S
PILLAI HOC COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
Via Panvel, Rasayani, Taluka Khalapur, Rasayani
Website - www.phcet.ac.in.
Contact No - +2192669000 /01/02/03

Navi Mumbai, Maharashtra, India
X4RH+65P, Triveni Society, Sector 16, New Panvel East, Panvel,
Navi Mumbai, Maharashtra 410206, India
Lat 18.990533°
Long 73.128001°
26/04/23 12:49 PM GMT +05:30

N. **Contact:**

Dr. Gajendra V. Patil
Convener IIC & Professor and Head, Mechanical Engineering Department
Pillai HOC college of Engineering and Technology
Pillai HOC educational campus, HOC colony, Rasayani Via Panvel
Dist: Raigad Pin: 410207
Mobile 9224281153, 9137024733