Annual Report 2024-25

A. About IIC Institute

Jawahar Education Society's A. C. Patil College of Engineering (ACPCE), established in 1992, is a leading institution spanning 3 acres in Kharghar, Navi Mumbai. ACPCE offers diverse graduate, post-graduate, and Ph.D. programs in Engineering and Management, accredited by AICTE and affiliated with the University of Mumbai. We've earned NAAC accreditation and the 'Best Engineering College' Educational iCON award for our industry engagement. Disciplines offered include Electrical Engineering, Electronics & Telecommunication Engineering, Computer Engineering, Information Technology, Mechanical Engineering, Artificial Intelligence & Data Science, Computer Science & Engineering (IoT and Cybersecurity, including Blockchain), Master of Management Studies, and Ph.D. Our mission is to mold adaptable technical professionals, providing top-tier education, research opportunities, industry exposure, and stateof-the-art facilities in a serene campus environment.

• Vision of IIC established at the Institute

"Empowering tomorrow's innovators, ACPCE Innovation Cell envisions a vibrant ecosystem where students, faculty, and multidisciplinary teams collaboratively conceive, develop, and transform ideas into impactful solutions that serve society and foster individual growth. We aspire to be a catalyst for innovation, encouraging students to create a lasting impact on the world through their entrepreneurial journey."

• Mission of IIC established at the Institute

Our mission at ACPCE Innovation Cell is to cultivate an innovation-driven culture among students. We are dedicated to:

➢ Encouraging, inspiring, and nurturing students, fostering their innovative mindset.
➢ Providing a platform for students and faculty from diverse backgrounds to collaborate and work on innovative projects.
➢ Transforming ideas into realistic projects through multidisciplinary approaches.
➢ Organizing seminars, workshops, and facilitating interactions with innovators and entrepreneurs.
➢ Building a supportive network for incubation and growth.
➢ Motivating and guiding students on their journey from ideation to entrepreneurship.
➢ Encouraging active participation in various idea, project, and challenge competitions.
➢ Showcasing faculty and student ideas and prototypes that contribute to positive change."
Through these endeavors, we aim to prepare our students for the dynamic challenges of the real world and inspire them to become successful innovators and entrepreneurs.

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

IIC was instituted at the A. C. Patil College of Engineering during the academic year 2018-19, immediately following instructions from MHRD to initiate IIC in higher education institutions. In the academic year 2022-23, the IIC nominated faculty members and students to the IIC council. Since its inception, ACPCE IIC has established a strong presence in the college, actively conducting activities outlined in the IIC calendar while also pursuing a range of self-driven initiatives. From 2022-23 onwards, faculty representatives from each department were included in the IIC to foster greater student and faculty involvement. This marked the beginning of a collaborative approach where departments-initiated innovation and entrepreneurship (I&E) activities tailored to their specific fields and student needs. The response from students was overwhelmingly positive, with many eager to join IIC due to the exceptional I&E programs organized by the institution. Faculty, students, and alumni played a vital role in encouraging departments to engage in innovation and entrepreneurship initiatives, further enhancing the institution's IIC ecosystem. The introduction of performance cards helped us in increasing the participation of students in engaging in sessions, webinars, hackathons etc. IIC conducts Seminars, Workshops, Quizzes, Panel discussions, Webinars, Motivational talks, student exhibitions, competitions, and Innovation Summits to nurture entrepreneurial skills in students. The Council has more than 150 student enrolments, which vouches for its acceptance among girls.

The Institute Innovation Cell (IIC) at A.C. Patil College of Engineering, Kharghar, has always been at the forefront of nurturing entrepreneurial spirit among its students. In line with the national agenda of fostering innovation and encouraging start-ups, this year, 2024-2025, the IIC organized its flagship two-day event, "INSIGNIA 2025", on 24th and 25th September 2025. The aim of the event was to provide a platform for students, budding entrepreneurs, and innovators to present their ideas, interact with mentors, and gain exposure to the start-up ecosystem at regional and national levels. The event achieved its objectives of fostering a culture of innovation and strengthening the start-up ecosystem within the institution. INSIGNIA 2025 not only inspired students but also established A.C. Patil College of Engineering as a hub for entrepreneurial activity, contributing meaningfully to the national vision of Start-up India and Atmanirbhar Bharat.

- **Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.**

The institute showcases a diversified representation of its IIC. The IIC of the college encompasses dynamic and active participation of members from diversified arenas starting from Industry, Start-up Entrepreneurs, Non-Governmental Organisations (NGOs), Environmentalist, Academicians to Student members belonging to different economic backgrounds and social classes

B. Brief mention of key functionaries at the IIC Institute

- **President - Dr. Dipti Patil**

Dr. Dipti Patil is having 21 years of teaching experience. She has completed her PhD in "Investigation into Protection Aspects of DC Microgrid Using Signature Analysis" in Mumbai University. She has various conference and journal paper on her name. During teaching she has handled various positions like department training and placement coordinator, Project coordinator, Students association coordinator, Examination coordinator, SPOC for NPTEL Local Chapter. She has guided 11 post graduates and more than 100 undergraduates' students. She has participated and organised in many STTP, FDP and workshops in online and offline mode. She published various research papers in reputed national and international journals and conferences.

- **Convenor - Dr. Ulka Shirole**

Dr. Ulka Shirole has done PhD in engineering from NMIMS University and currently working as assistant professor in CSE dept. A. C. Patil College of engineering, Navi Mumbai, Maharashtra. She has 19 years of teaching experiments. Her area of interest is IoT, machine learning. She is working as head of the department of Computer science and engineering since December 2023. She also coordinated various competitions like kavach 23, University research convention Avishkar -23. She published various research papers in reputed journals published by Elsevier, ieee, springer, etc. She was incharge of institute technical festival vector-23. She is working as convener for IIC ACPCE for 2022-23. She coordinated for conduction of various institute innovation cell activities.

- **Innovation Activity Coordinator - Prof. Nitin P. Chawande**

Prof. Nitin P. Chawande, brings a wealth of experience with an impressive 30 years in Electronics and Computer Engineering. His journey began with significant contributions in Electronics consultancy services, evolving seamlessly into teaching and innovation leadership. Prof. Chawande holds Head of the Department positions in various departments, including Electronics & Telecommunication Engineering, Computer Engineering, and Information Technology. His contributions span paper publications, product development, and project guidance. Notably, he possesses extensive expertise in Operations, Administration, Maintenance, and Procurement (OAMP) of IT products. Prof. Chawande's multifaceted contributions were prominently showcased during the enlightening session on "Innovation/Prototype Validation – Converting Innovation into a Startup." His rich experience, dedication, and proficiency make him an asset to our institution.

- **Internship Activity Coordinator – Prof. P. N. Ghate**

Prof. P. N. Ghate has a teaching experience of 29 years, presently working as a Associate Professor in Department of Electronics and Telecommunication Engineering in A C Patil College of Engineering, Kharghar, Navi Mumbai. He obtained his BE in Electronics degree

from Amravati University, post graduated in Systems & Controls from IIT Bombay, Mumbai, he is currently pursuing PhD from NMIMS University. His research interest includes Electronic Devices, Embedded electronic systems, Solar Energy and electronic properties of solar cell materials. He is currently handling Institute Interaction Cell activities of college.

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

Total No. of IIC Members	**47**
Total No. of IAs (Teaching/Non-Teaching and Students)	**2**
Total No. of faculty Mentors	**14**
Pre-Incubation Units, If any	**1**
Incubation Units, If any	**0**
IP Facilitation Unit, If any	**1**

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

Each department within our institution has established its own technical and professional organizations, such as CSI (Computer Engineering, Information Technology, Artificial Intelligence & Data Science, Computer Science & Engineering), IETE in Electronics & Telecommunication Engineering, ISHARE in Mechanical Engineering and EESA in Electrical Engineering. These bodies collaborate with our Institute Innovation Council (IIC) to organize a variety of technical, innovation, and entrepreneurship skillbased programs. In addition to these organizations, we have a dedicated ROBOCON team that actively participates in national-level Robocon competitions. Our students are also encouraged to engage in innovation and research-oriented competitions like Avishkar, Hackathon and Yukti. To foster a culture of innovation and technical prowess, our college hosts the annual technical festival 'Vector,' where students can showcase their innovative and technical skills. Furthermore, we have established a Pre-Incubation Center that facilitates multidisciplinary discussions and guidance for students. Additionally, we provide a dedicated hall for innovation cell and robotics challenges, enabling students to work on projects beyond regular college hours.

E. Highlight Achievements (Narrative/Graphical/tabular representation)

Number and Different types of I&E and IPR activities Conducted	24
No. of student's & faculty ideas generated	8
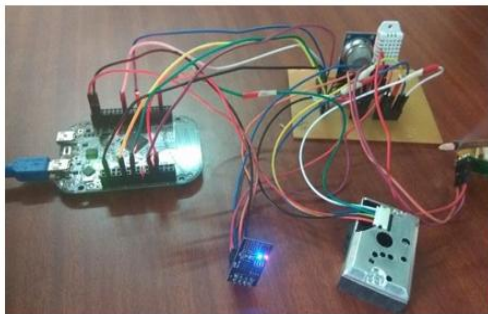
|	
No. of student's & faculty Innovation/prototypes developed	3
No. of IPs generated, published and granted	7
No. of Student & Faculty Start-ups/Ventures established.	1
Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus	2,50,000/-
Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR	10000
No. of Technology Transfer and Commercialisation happened	-

F. G. Highlight few best IIC Faculty/Student members and their achievements/ Rewarded for the innovations at different forum. Highlight selected best Innovations & images with mention of inventor/innovation name

Automatic College Bell by **Prof. Nitin P Chawande** *(2007)*	
Indoor Air Quality Monitoring System by **Prof. Nitin P Chawande**	

![ACPCE Innovation Cell logo]

![Institution's Innovation Council logo]

Jawahar Education Society's
A.C. Patil College of Engineering
Institute Innovation Council (IIC)

![A C Patil College of Engineering logo]

IIC ID IC201811299

Report of 19th Aavishkar: Inter-Collegiate/Institute/Department Research Convention 2024-25

Podium Round winner to select for final rounds:

Slot No	Project Title	Catagory	Participant Name	Department
S1051180	Ornithopter A Vision Beyond	Engineering and Technology	• Deorukhkar Nikitesh • Deorukhkar vighnesh • Kapse Shubham • Parkar Uday	EXTC
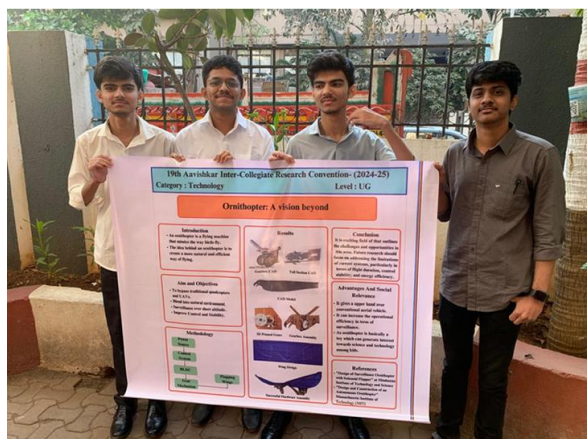
H. Highlight selected start-ups established by students/faculties with mention of founder/cofounder name

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

Fast Electric Battery Charger: (Dr. D. S. Marathe & Team): Today, most devices have a backup and the primary power source is the battery For complete utilization, a charger circuit must charge the battery to full capacity The existing charger have found the following charging problem, Over input Excess voltage Short circuit Overheating Time consumption Multiple batteries cannot charge. This charging circuit with modified transformer winding and wire gauge allows you to charge multiple batteries at once without damaging the battery. Most of the above problems are solved with the prototype electric battery charger by

changing the transformer wire thickness and number of turns in the primary and secondary used in the winding. It makes the charger powerful to charge multiple batteries and work at any temperature and protect from overheating

Portable Solar Powered Refrigeration System (Prof. Puja Sutar) is an innovative solution designed to provide reliable and eco-friendly cooling in off-grid and remote locations. The system operates using solar photovoltaic (PV) energy, which is converted into electricity to drive a DC compressor, supported by a lithium-ion battery for energy storage. This setup ensures continuous refrigeration, even during low sunlight conditions. The system employs environmentally friendly refrigerants such as butane and integrates smart control circuits for temperature regulation. Its design emphasizes portability, low maintenance, and affordability. This technology addresses critical challenges in food preservation, healthcare, and disaster relief by providing sustainable cold storage for perishable goods, medicines, and vaccines.

J. Participation of IIC-institute in various programs of Central and Stage Govt. Highlighting specially for the schemes or programs

- Hacathon
- DD Robocon
- Avishkar
- YUKTI

Smart India Hackathon: The team comprising of faculty and students is formed to participate in the SIH

K. Detail of Social Media & Connections of IIC institute

- InstagramLink:https://instagram.com/icell_acpce?igshid=OGQ5ZDc2ODk2ZA==
- Insignia 2025 (@insignia_acpce) • Instagram photos and videos
- ((27) Post | LinkedIn
- FacebookLink:https://www.facebook.com/profile.php?id=100094725445719
- YoutubeChannel:https://www.youtube.com/@innovationcellacpce/featured
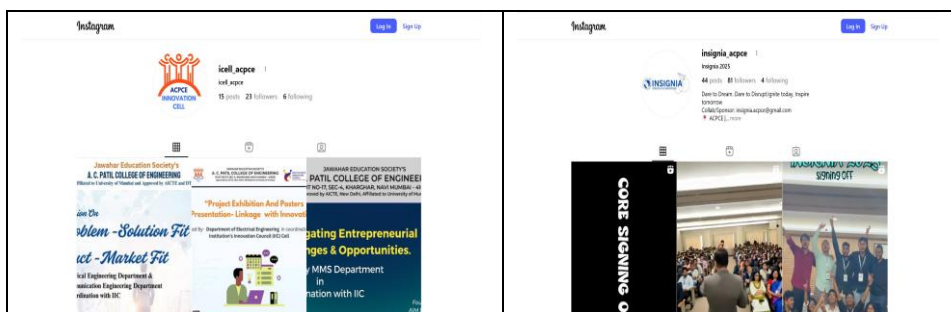
L. Testimonials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell

| 1 | **Prof. Nitin P. Chawande - Innovation Activity Coordinator**
 Being an Innovation Coordinator has been an incredibly fulfilling journey. Guiding students and colleagues to think beyond conventional boundaries and nurturing their creative ideas into tangible solutions has been a privilege. Witnessing the transformation of raw concepts into impactful innovations is |

	truly inspiring. The collaborative environment and the enthusiasm of the participants have constantly motivated me to push the limits of innovation.
2	**Dr. A. R. Sonule - Startup Activity Coordinator** Being a Startup Activity Coordinator has been an incredibly fulfilling journey. It has allowed me to channel my passion for innovation and entrepreneurship into creating opportunities for aspiring founders. From organizing workshops and hackathons to mentoring budding entrepreneurs, every step has been a learning experience.
3	**Dr. L. K. Pandye - IPR Activity Coordinator** My primary responsible as a IPR activity coordinator is to promote awareness about IPRs and conduct related activities, and extend support to other activities on campus or as mandated in IIC council meeting.
4	**Prof. P. N. Ghate - Internship Activity Coordinator** As a internship activity coordinator my duty is to work for arranging student internships in startups, Also expose them with startup ecosystem in India, real-life challenges in startup and their success stories or as mandated in IIC council meeting
5	**Prof. Shaila P. Pawar - Social Media Coordinator** As a Social Media Coordinator my work is to create and manage IIC page/account on Facebook, Twitter and YouTube and other relevant social media platforms. I am responsible for posting all the relevant information about council meeting resolution and action plan, IIC activities and follow/tag MIC/IIC page and posts on these platforms. I am also ensuring that all students follow MIC/IIC page/account on social media to get first-hand information.
6	**Dr. J. V. Terdale - ARIIA Coordinator** My primary responsible as ARIIA coordinator is to create repository and advising on more innovation and startup activities in campus to increase the ranking in ARIIA and also extend support to other activities.
7	**Dr. H. S. Badodekar - NIRF Coordinator** As the NIRF Coordinator, I am instrumental in collecting, analyzing, and presenting data that accurately reflects the institution's performance across various parameters such as teaching, learning, research, and outreach.
8	**Dr. Asra Sadaf – Member** To foster an entrepreneurial culture, by providing the students, alumni, and faculty, opportunities to transform their business ideas to reality. These facilities are also open to the general public
9	**Mr. Kalpesh Premchand Patil - Student member Innovation Cell** IIC providing a platform for collaboration, networking, and knowledge-sharing among students, faculty, and industry experts.
10	**Ms. Avani Gorde - Student member Innovation Cell** Nurture culture of innovation at campus, helping idea to translate into reality and upgrade them to the level of commercial value. Allow to create startup ecosystem at campus.

M. Images

ACPCE
INNOVATION
CELL
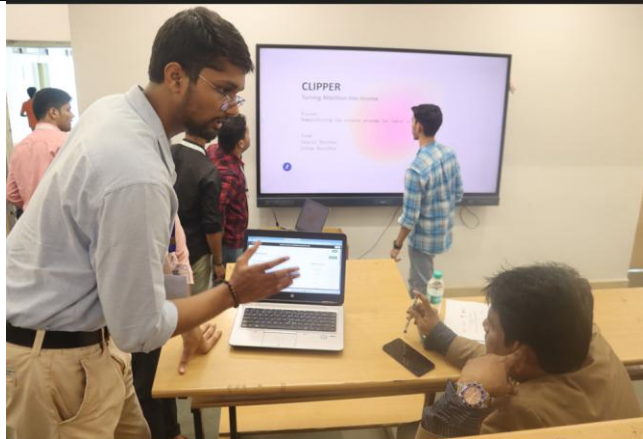
INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education Initiative)

Jawahar Education Society's
A.C. Patil College of Engineering
Institute Innovation Council
(IIC)
IIC ID IC201811299

AC Patil
College *of* Engineering

M. Contact

Institute Innovation Council (IIC)

A C Patil
Jawahar Education Society's
A.C. Patil College of Engineering
Institute Innovation Council (IIC)

Circular

Date: January 12, 2025

The revised committee for Institute Innovation Council (IIC) for academic year 2024-25 is as follows:

Sr. No.	Name of Member	Member Type (Teaching/ Nonteaching /Student/External Expert)	Key Role/ Position assigned in IIC
1	Dr. Dipti D. Patil	Assistant Professor	President
2	Dr. Ulka M. Shirole	Assistant Professor	Convener
3	Prof. Nitin P. Chawande	Associate Professor	Innovation Activity Coordinator
4	Dr. A. R. Sonule	Associate Professor	Startup Activity Coordinator
5	Prof. L. K. Pandye	Assistant Professor	IPR Activity Coordinator
6	Prof. P. N. Ghate	Associate Professor	Internship Activity Coordinator
7	Prof. Shaila P. Pawar	Assistant Professor	Social Media Coordinator
8	Dr. J. V. Terdale	Assistant Professor	ARIIA Coordinator
9	Dr. H. S. Badodekar	Assistant Professor	NIRF Coordinator
10	Prof. J. S. Jadhav	Assistant Professor	Member
11	Dr. Asra Sadaf	Assistant Professor	Member
12	Prof. Ranjana Mahajan	Assistant Professor	Member
13	Mr. Vidyadhar Kulkarni	Training Placement Officer	Member
14	Prof. Abhijeet V. Salunke	Assistant Professor	Member

Dr. D. D. Patil
(President)
Institute Innovation Council (IIC)

Dr. V. N. Pawar
Principal

Convener IIC	President IIC	Principal
(Dr. U. M. Shirole)	(Dr. D. D. Patil)	(Dr. V. N. Pawar)