



ANNUAL REPORT 2024 - 2025

Institution's Innovation Council

National Institute of Technology Calicut



A. About IIC Institute

- Vision / Mission of IIC established at the Institute

Vision

To build a vibrant and sustainable innovation ecosystem that nurtures creativity, supports startups, and empowers technology-driven problem-solving for societal impact.

Mission

- Foster a culture of innovation and entrepreneurship through structured support systems.
- Establish strong mechanisms for scouting, validating, and pre-incubating ideas.
- Prepare the institute for excellence in national innovation rankings and frameworks.
- Enhance the cognitive and creative abilities of students to develop impactful technologies.

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

The Institution's Innovation Council was formed at NIT Calicut in the year 2018-19 and henceforth the Institute has actively participated in all the activities organised by the Ministry of Education's Innovation Cell (MIC) and AICTE. The IIC-NIT Calicut has conducted several programmes in various areas, such as Innovation, Mentoring, Business plan competitions, Entrepreneurship and IPR, since its inception in 2018.

Under **IIC 1.0**, in the year 2018-19, one of the innovative ideas Desalination System by a team of students led by **Sri. Vishrut Goswami**, B Arch, NITC was chosen as one of the shortlisted teams for the Boot camp and Exhibition out of the total of 43 innovative ideas chosen for the same from across the country. The team was then chosen for further mentoring and funding support by MIC and AICTE and was sanctioned with a funding support of ₹3,00,000/- (Rupees Three Lakh only) for further product development and the team is currently working on the same.

Under **IIC 2.0**, in the year 2019-20, out of the three ideas nominated by the IIC of NIT Calicut, one idea was shortlisted under the list of qualified prototypes for second stage of training and evaluation. Similarly, one of the student teams, led by **Sri. Vikas Badami** has

also participated in another Business plan competition, ie, the Startup Conclave, an inter NIT business plan competition. This was as a result of inspiration generated by the activities organised within the institute under the IIC. Under IIC 2.0, several activities were conducted both online and offline. In addition, four innovation ambassadors were trained under IIC 2.0.

Under **IIC 3.0 and 4.0**, in the years 2020-22, 16 activities under the IIC calendar, 7 under MIC driven and 14 activities under self-driven were conducted by IIC NITC. One of the major outcomes of the activities conducted under IIC 3.0 is that two innovative ideas at the grassroots level were selected for further mentoring support and initial financial support at the Institute level, based on the requirements of the associated student innovators. RUTALAC by **Sri. Santo Jacob Koshy** and team and Portable Mini sanitizer by **Ms. Aastha Mariam John** are the two ideas selected for the same. Thus, from an overall perspective, the activities conducted under the IIC have benefitted the overall development of the innovation ecosystem within the institute.

Under **IIC 5.0**, in the year 2022-23, IIC NITC organized a total of 28 activities under the IIC calendar, 9 activities driven by MIC, and 18 activities that were self-driven. One of the significant outcomes resulting from these activities under IIC 5.0 was the identification and selection of approximately 46 novel and innovative ideas at the grassroots level. These promising ideas were subsequently chosen to receive further mentoring and initial financial support at the institute level, tailored to meet the specific needs of the associated student innovators. Remarkably, these efforts also led to the submission of 21 patent applications, further underscoring the institution's commitment to innovation. Additionally, one student startup emerged directly from these initiatives. From an overarching perspective, the activities conducted under IIC 5.0 have substantially contributed to the overall development of the innovation ecosystem within the Institute, fostering a culture of creativity and entrepreneurship.

Under **IIC 6.0**, in the year 2023 - 24, the Institution's Innovation Council (IIC) at NIT Calicut successfully organized 62 activities including 30 activities as part of its IIC calendar. This included 7 activities driven by the MHRD's Innovation Cell (MIC), 9 self-driven initiatives, and 16 calendar-based activities. A notable outcome of these efforts was the identification and selection of approximately 90 novel and innovative grassroots ideas. In addition, the Institute Innovation Council (IIC) and the Centre for Innovation, Entrepreneurship & Incubation (CIEI) have been actively supporting student initiatives since 2018. This support has come in the form of workshops, mentorship, and funding for more than 108 projects. Furthermore, the

Technology Business Incubator (TBI) has played a crucial role in incubating 115 startups, leading to the creation of over 1500 jobs. These achievements highlight the significant impact of IIC activities on fostering innovation and entrepreneurship.

To showcase student innovation, a demonstration and poster presentation were held on May 7th, 2024. This event highlighted the outcomes of 81 undergraduate and postgraduate student projects that received funding to promote patent filings, copyrights, startups, and technology transfer. During the financial year 2023–2024, 48 patent applications were submitted and 25 patents were granted. Additionally, 24 patents were filed between January and July 31, 2024. The center also supported the launch of 8 new startups during this period, underscoring its commitment to fostering innovation and entrepreneurship among students.

Under **IIC 7.0**, in the year 2024-25, the Institution's Innovation Council (IIC) at NIT Calicut successfully organized a total of 67 activities including 32 activities as part of its IIC calendar. This included 9 activities driven by the MHRD's Innovation Cell (MIC), 10 self-driven initiatives, and 16 celebration activities. A notable outcome of these efforts was the identification and selection of approximately 155 novel and innovative grassroots ideas. A total of 66 Innovation ambassadors were selected, ensuring member participation from several domains. of these, **57 completed basic training** and **15 completed advanced training**. A total 10 student ambassadors are nominated for the IA training, of which 9 completed the training and 2 completed the advance training. This year, NIT Calicut hosted a one day **IP & Technology Transfer (TT) Workshop**, with collaboration of AICTE Indovation centre trivandrum, on Thursday, July 3, 2025, with a total of 50 plus participants.

On Demo Day, conducted on 5 & 6 March 2025, a total of 57 UG and PG students displayed innovative projects, and the top 10 innovations were selected and awarded. The same projects were also nominated for the YUKTI Innovation Challenge 2025, underscoring the commitment to fostering innovation and entrepreneurship among students.

A total of 55 startups are incubated in the TBI, of which 13 are by students and alumni, 4 from the faculty, and 38 were others. This is a great achievement of this year. A total number of 75 patent applications are submitted, of which 36 patents are granted and 39 are published, and 10 patent applications are under process.

- Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/Units, etc. The IIC of NIT Calicut is constituted by students and faculty members of the institute and external experts. Faculty members were selected

from different departments to ensure interdisciplinary representation. The following are the council members.

S. No.	Name	Role	Department
1	Dr. T.J. Sarvoththama Jothi	President	Mechanical Engineering
2	Dr. Preethi M	Vice President	Technology Business Incubator
3	Dr. Sudheer A.P	Chairperson, CIEI	Mechanical Engineering
4	Dr. Sreekanth V.K.	Convener	Management Studies
5	Dr. K. Ratna Kumar	Student/Staff/Faculty Start up Activity Coordinator	Mechanical Engineering
6	Dr. Vineesh K. P	NIRF-Innovation Coordinator	Mechanical Engineering
7	Dr. Noel Jacob Kaleekkal	IPR Activity Coordinator	Chemical Engineering
8	Dr. Deepthi Bendi	Innovation Activity Coordinator	Architecture and Panning
9	Dr. K. Sekar	Internship Activity Coordinator	Mechanical Engineering
10	Dr. Ilanila I. P.	Social Media Coordinator	Bioscience and Engineering
11	Dr. Nasirul Haque	Student Innovative Projects Coordinator	Electrical Engineering
12	Dr. Rakesh R Warier	Student Innovative Projects Coordinator	Electrical Engineering
13	Dr. Pradeepmon T G	Student Innovative Projects Coordinator	Mechanical Engineering
14	Dr. Nithya M	Innovation Ambassador	Management Studies
15	Dr. Sudeep P V	Innovation Ambassador	Electronics and Communication Engineering
16	Dr. Hiran V Nath	Member	Computer Science Engineering
17	Dr. Raghu C V	Member	Electronics and Communication Engineering
18	Dr. Chandra Sekhar Bestha	Member	Chemical Engineering
19	Dr. Subramanyan N V	Member	Physics
20	Dr. S Kumaravel	Member	Electrical Engineering
21	Dr. K M Arun Neelimegham	Member	Electrical Engineering

22	Dr. L G Kiran Kumar	Member	Mechanical Engineering
23	Dr. Ravindra Kumar	Member	Bioscience and Engineering
24	Dr. Praveen Kumar G	Member	Chemical Engineering
25	Dr. Bhuvaneshwari S	Member	Chemical Engineering
26	Dr. Jayachandran K	Member	Civil Engineering
27	Dr. Goutam Kumar Chandra	Member	Physics
28	Dr. Neetu Garg	Member	Mathematics
29	Dr. Sanil Kumar	Member	Architecture and Planning
30	Dr. Subha D P	Member	Electrical Engineering
31	Dr. Vivek Mohan	Member	Electrical Engineering
32	Dr. Anuj A Vargeese	Member	Chemistry
33	Dr. Manju Mahipalan	Member	Management Studies
34	Dr. Susmita Das	Member	Chemical Engineering
35	Dr. Ahammed Sherief K Y	Member	Chemical Engineering
36	Dr. Deepa S N	Member	Electrical Engineering
37	Dr. Nimal Madhu	Member	Electrical Engineering
38	Dr. Ashiq muhammed P E	Member	Electrical Engineering
39	Dr. Rahul R	Member	Electrical Engineering
40	Dr. Ranjith R Nair	Member	Electrical Engineering
41	Dr. Devesh Shukla	Member	Electrical Engineering
42	Dr. Angshudeep Majumdar	Member	Electrical Engineering
43	Dr. Shihabudheen K V	Member	Electrical Engineering
44	Dr. Deepak M	Member	Electrical Engineering
45	Dr. Sathiya S	Member	Electrical Engineering

46	Dr. Vinod Kumar sharma	Member	Mechanical Engineering
47	Dr. Amit Kumar Rai	Member	Mechanical Engineering
48	Dr. Vikash Kumar	Member	Mechanical Engineering
49	Dr. Nidhi Baranwal	Member	Mechanical Engineering
50	Mr. Sreenath A M	Member	Mechanical Engineering
51	Dr. Mohammed Rashad K	Member	Mechanical Engineering
52	Dr. Arun Babu K	Member	Mechanical Engineering
53	Dr. Pradeepmon T G	Member	Mechanical Engineering
54	Dr. Sanjeev Kumar Manjhi	Member	Mechanical Engineering
55	Dr. AVSSH Sravan kumar	Member	Mechanical Engineering
56	Dr. Sharu B K	Member	Mechanical Engineering
57	Dr. Arindam Bhattacharjee	Member	Mechanical Engineering
58	Dr. R Prabhu Sekar	Member	Mechanical Engineering
59	Dr. Ilango M	Member	Mechanical Engineering
60	Dr. Sangeeth K	Member	Mechanical Engineering
61	Dr. Jithin M	Member	Mechanical Engineering
62	Dr. Pranay Vinayak Likhar	Member	Mechanical Engineering
63	Dr. Panneerselvam Ranganathan	Member	Chemical Engineering
64	Dr. Baiju G Nair	Member	Bioscience and Engineering
65	Dr. Sindhu T.K	Member	Electrical Engineering
66	Dr. Rajasekhara Reddy K	Member	Bioscience and Engineering
67	Dr. Indumathi Sathisaran	Member	Bioscience and Engineering
68	Dr. Tom Skaria	Member	Bioscience and Engineering
69	Dr. Saket Chandra	Member	Bioscience and Engineering

70	Dr. Gangireddy Narendra Kumar Reddy	Member	Electronics and Communication Engineering
71	Dr. Nikhil Kumar CS	Member	Electronics and Communication Engineering
72	Dr. Jagadeesh V K	Member	Electronics and Communication Engineering
73	Dr. Gaurav Siddharth	Member	Electronics and Communication Engineering
74	Dr. Srinivasarao C	Member	Electronics and Communication Engineering
75	Dr. Jailsingh Bhookya	Member	Electronics and Communication Engineering
76	Dr. Rajanikant G. K.	Member	Bioscience and Engineering
77	Dr. M. Sankaralingam	Member	Chemistry
78	Dr. Vrinda Varma	Member	Humanities Arts and Social Sciences
79	Dr. Debashish panda	Member	Chemical engineering
80	Dr. Natesan Yogesh	Member	Physics
81	Dr. Chandru P	Member	Civil Engineering
82	Dr. Cecil Antony	Member	Bioscience and Engineering
83	Dr. Janardhan Banothu	Member	Chemistry
84	Dr. Nehem Tudu	Member	Mechanical Engineering
85	Dr. Chinna Ayya Swamy P	Member	Chemistry
86	Dr. Greeshma Mohan U	Member	Electrical Engineering
87	Dr. Fathima Fasmin	Member	Chemical Engineering
88	Dr. M. Sivakumar	Member	Civil Engineering
89	Dr. Amit Kumar Singh	Member	Mechanical Engineering
90	Dr. Saravana Kumar S	Member	Management Studies
91	Dr. Akansha Singh	Member	Management Studies
92	Dr. Prateek Negi	Member	Civil Engineering
93	Dr. Sai Saketha Chandra Athkuri	Member	Mechanical Engineering

94	Dr. Sandip Rudha Budhe	Member	Mechanical Engineering
95	Dr. M. Surya Prakash	Member	Electronics and Communication Engineering
96	Ms. Sajana	Member	Architecture and Planning
97	Dr. Pournami P.N.	Member	Computer Science and Engineering
98	Dr. Abhishek Kumar	Member	Architecture and Planning
99	Dr. Labeeba K	Member	Architecture and planning
100	Mr. Azmeera Srinivasa Naik	Member	CIEI
101	Dr. Sujith Kumar CS	Member	Mechanical Engineering
102	Dr. Anil Pinapati	Member	Computer Science and Engineering
103	Dr. Nirmal Kumar Boran	Member	Computer Science and Engineering

A total of **66 Innovation Ambassadors** were selected, ensuring member participation from several domains. of these, **57 completed basic training** and **15 completed the advanced training**, as giving in the following list.

S. No.	Name	Email	Completed or Not
1	Dr. Anuj A Vargeese	aav@nitc.ac.in	Completed
2	Dr. Amit Kumar Rai	amitrai@nitc.ac.in	Completed
3	Dr. Amit Kumar Singh	amitsingh@nitc.ac.in	Not Completed
4	Dr. Sudheer A.P.	apsudheer@nitc.ac.in	Completed
5	Dr. K M Arun Neelimegham	arunkm@nitc.ac.in	Completed
6	Mr. Azmeera Srinivasanaik	asrinivasanaik@nitc.ac.in	Completed
7	Dr. Baiju G Nair	bgnair@nitc.ac.in	Completed
8	Dr. Basil Kuriachen	bk@nitc.ac.in	Completed
9	Dr. Deepthi Bendi	deepthib@nitc.ac.in	Completed
10	Dr. Devesh Shukla	deveshshukla@nitc.ac.in	Not Completed

11	Dr. Gangadhara Kiran Kumar L	ganga@nitc.ac.in	Completed
12	Dr. Goutam Kumar Chandra	goutam@nitc.ac.in	Completed
13	Ms. Dalu Ramya	haarikasasi@gmail.com	Not Completed
14	Dr. Hiran V Nath	hiranvnath@nitc.ac.in	Completed
15	Dr. Ilango M	ilango@nitc.ac.in	Completed
16	Dr. Ilanila I. P.	ilanila@nitc.ac.in	Completed
17	Dr. Indumathi Sathisaran	indumathis@nitc.ac.in	Completed
18	Dr. Jayachandran K	jk@nitc.ac.in	Completed
19	Dr. S Kumaravel	kumaravel_s@nitc.ac.in	Completed
20	Dr. Labeeba K	labeebak@nitc.ac.in	Completed
21	Dr. Manju Mahipalan	manju@nitc.ac.in	Completed
22	Mr. Manu George	manugeorge027@gmail.com	Completed
23	Dr. M. Sankaralingam	msankaralingam@nitc.ac.in	Not Completed
24	Dr. Gangireddy Narendra Kumar Reddy	narendrakumarreddy@nitc.ac.in	Completed
25	Dr. Nasirul Haque	nasirul@nitc.ac.in	Completed
26	Dr. Neetu Garg	neetu@nitc.ac.in	Completed
27	Dr. Nikhil Kumar C.S	nikhilkumares@nitc.ac.in	Completed
28	Dr. Nimal Madhu	nimalmadhum@nitc.ac.in	Completed
29	Dr. Nithya M	nithyam@nitc.ac.in	Completed
30	Dr. Noel Jacob Kaleekkal	noel@nitc.ac.in	Completed
31	Dr. Pradeepmon T.G	pradeeptg@nitc.ac.in	Completed
32	Dr. Prasannakumar S Mural	prasannakumar@nitc.ac.in	Completed
33	Dr. Praveen Kumar G	praveenkg@nitc.ac.in	Completed
34	Dr. Preethi M	preethi@nitc.ac.in	Completed

35	Dr. Raghu C V	raghucv@nitc.ac.in	Completed
36	Dr. Rajanikant G.K.	rajanikant@nitc.ac.in	Not Completed
37	Dr. Rajasekhara Reddy K	rajasekharareddy@nitc.ac.in	Completed
38	Dr. Rakesh R Warier	rakeshw@nitc.ac.in	Completed
39	Dr. Ranjith R Nair	ranjithrnair@nitc.ac.in	Completed
40	Dr. Ratna Kumar Kondareddy	ratna_kumar@nitc.ac.in	Completed
41	Dr. Ravindra Kumar	ravindra@nitc.ac.in	Completed
42	Dr. Sangeeth K	sangeethkrishnan@nitc.ac.in	Completed
43	Dr. Sanil Kumar	sanil@nitc.ac.in	Completed
44	Dr. Sanil Kumar	sanilkumar.mcgans@gmail.com	Completed
45	Dr. Sathiya S	sathiyas@nitc.ac.in	Not Completed
46	Dr. Bhuvaneshwari S	sbuwana@nitc.ac.in	Completed
47	Dr. Chandra Sekhar Bestha	schandra@nitc.ac.in	Completed
48	Dr. K. Sekar	sekar@nitc.ac.in	Not Completed
49	Dr. Sharu B K	sharubk@nitc.ac.in	Completed
50	Dr. Ahammed Sherief K.Y.	sherief@nitc.ac.in	Completed
51	Dr. M. Sivakumar	sivakumarm@nitc.ac.in	Completed
52	Dr. Deepa S N	sndeepta@nitc.ac.in	Completed
53	Dr. AVSSH Sravan Kumar	sravankumar@nitc.ac.in	Completed
54	Dr. Sreekanth V.K	sreekanth@nitc.ac.in	Completed
55	Mr. Sreenath A.M	sreenath@nitc.ac.in	Completed
56	Dr. Srinivasa Rao C	srinivasarao@nitc.ac.in	Not Completed
57	Dr. Subha D.P	subhadp@nitc.ac.in	Completed
58	Dr. P.V. Sudeep	sudeep.pv@nitc.ac.in	Completed

59	Dr. Susmita Das	susmitadas@nitc.ac.in	Completed
60	Dr. T.J. Sarvoththama Jothi	tjsjothi@nitc.ac.in	Completed
61	Dr. Subramanyan N.V.	varanakkottu@nitc.ac.in	Completed
62	Dr. Vinay V Panicker	vinay@nitc.ac.in	Completed
63	Dr. Vineesh K.P.	vineesh@nitc.ac.in	Completed
64	Dr. Vinod Kumar Sharma	vinodks@nitc.ac.in	Completed
65	Dr. Vivek Mohan	vivekmohan@nitc.ac.in	Completed
66	Dr. Vrinda Varma	vrindavarma@nitc.ac.in	Completed

A total of **09 Student Innovation Ambassadors** were selected, ensuring member participation from several domains. of these, **8 students** completed **basic training** and **3 students completed Advance training**, as giving in the following list.

S. No.	Name	Basic Training Status	Advance Training Status
1	Abinav Bharath Ashok Kumar	Not completed	Not completed
2	S Deepak Raam	Completed	Not completed
3	Gajji Nagaraju	Completed	Not completed
4	Maddula Sri Ram Gupta	Completed	Completed
5	Muhammad Swalih K M	Completed	Not completed
6	Rajin Hoque	Completed	Not completed
7	Ranjan Kumar Gupta	Completed	Not completed
8	Vangimalla Sai Lohith Reddy	Completed	Completed
9	Vustela Prashanth Reddy	Completed	Completed

B. Brief mention of key functionaries at the IIC Institute

- **President: Dr. T.J. Sarvoththama Jothi**



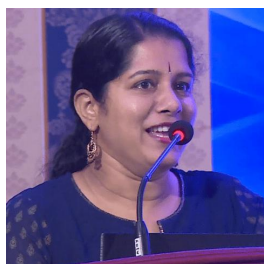
Dr. T.J. Sarvoththama Jothi is an Associate Professor in the Department of Mechanical Engineering at the National Institute of Technology Calicut (NIT Calicut), India. He earned his Bachelor's degree in Mechanical Engineering from Madurai Kamaraj University, followed by a Master's degree in Energy Engineering from Regional Engineering College Tiruchirappalli (now National Institute of Technology Tiruchirappalli), and a Ph.D. from the Indian Institute of Technology Madras in 2010. Subsequently, he pursued post-doctoral research at the Korea Advanced Institute of Science and Technology (KAIST) in South Korea. Dr. Jothi joined NIT Calicut as an Assistant Professor in 2010 and has since been a part of this institution.

His research interests include aeroacoustics, jet flow, noise control, and combustion. Over the years, he has published approximately 40 journal articles and 70 conference papers. He has successfully supervised four Ph.D. scholars and guided more than 35 Master's students. Dr. Jothi is an active member of several national and international scientific societies. He received fellowships from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, and the Indian National Science Academy (INSA) to conduct research in prestigious laboratories. In recognition of his contributions to Mechanical Engineering, he was honoured with the Young Engineers Award by The Institution of Engineers (India) in 2012.



- **Dr. A.P. Sudheer, Chairperson, Centre of Innovation Entrepreneurship and Incubation (CIEI)** and Associate Professor, Mechanical Engineering, National Institute of Technology Calicut. He is in teaching, research and academic administration for the last 25 years. He has nearly 90 publications in International and national journals and conferences. He is guiding M.Tech and PhDs students. He has 12 patents granted in the area of Mechatronics systems. His research interests are kinematics, dynamics and control of robotics, mobile robotics and vision systems. He is a member of "The Robotics Society-India"(TRS-India) and ISTE. He was the editor of TRS-India. He is a reviewer of various technical journals. He is a member of board of studies in various engineering Institutions/universities.

- **Vice President: Dr. Preethi M, Chief Executive officer, TBI – NIT Calicut**



hardly heard in common.

- **Convenor: Dr. Sreekanth V K**



Dr. Sreekanth V K is an Assistant Professor in the Business Analytics and Systems Department of Management Studies at the National Institute of Technology Calicut. He earned his Ph.D. from the Rajendra Mishra School of Engineering Entrepreneurship, IIT Kharagpur, where he actively collaborated with the Technology Business Incubator (TBI), mentored start-ups, and served on evaluation panels for idea hackathons. At NITC, he coordinates the Minor in Entrepreneurship and Business Analytics and contributes to the Centre for Innovation, Entrepreneurship and Incubation. With a transdisciplinary background and prior industry experience as a developer and trainer at Infosys, he combines analytics and innovation. He has also co-authored the book Designing Service Machines on service system design.



- **Coordinator, Mentor & Mentee: Dr. Praveen Kumar G**

Dr. Praveen Kumar G, Assistant Professor at NIT Calicut, specializes in chemical reaction engineering, biofuel synthesis, and catalytic process optimization. He holds a B.Tech. in Chemical Engineering (Osmania University), M.Tech. in Energy Engineering (NIT Tiruchirappalli), and Ph.D. in Chemical Engineering (IIT Bombay), where his research focused on bio-oil upgrading and kinetic modeling of biomass-derived fuels. At NIT Calicut, he leads research on renewable fuels and green chemical processes, with numerous publications and conference presentations. An IIC Innovation Ambassador, NSS officer, and member of the Centre for Sustainable Technologies, he actively promotes clean energy, innovation, and societal impact through research and outreach.



- **Innovation Activity Coordinator: Dr. Deepthi Bendi**

Dr. Deepthi Bendi is associated with NIT Calicut since 2018. She

pursued Ph.D. and Masters from School of the Built Environment, University of Salford, Manchester, UK and Bachelors in Architecture from School of Planning and Architecture- JNTU (Now JNFAU), Hyderabad, India. The academic and industry experience in Construction Management weaved her research interest in off-Site Construction, Modern Methods of Construction, Construction Process Efficiency, IT in Construction, and Finance in the Built Environment. Along with teaching and research, she is currently serving as the Vice chairperson (Internships) in the Centre for Career Development of NIT Calicut and Innovation Ambassador through the Ministry of Education Innovation Cell. Recently, Dr. Bendi is inducted to the Editorial Advisory Board of Construction Innovation- International journal by Emerald Publishing. In 2021 She was appointed as a working group member by the Kerala Planning Board to prepare the 14th Five-Year Plan 2022-2027 in the category Housing.



- **Dr. Noel Jacob K., IPR Activity Coordinator** and Dr. Noel Jacob Kaleekkal, Assistant Professor of Chemical Engineering at NIT Calicut, leads the Membrane Separation Group, specializing in advanced nano-enabled polymeric membranes for desalination, wastewater treatment, fuel cells, and resource recovery. With degrees from NIT Karnataka and Anna University, he has 50+ publications, 7 patents, and supervised multiple scholars. Recipient of INAE, IEI, and Kerala Young Scientist Awards, he manages major funded projects and coordinates the IPR Cell at NITC.



- **Dr. Vineesh K P, NIRF Coordinator** and Assistant Professor, Department of Mechanical Engineering Dr. Vineesh K P has done his Ph. D from IIT Bombay. He is into the profession of teaching in the Institute in the Mechanical Engineering Department for ten years



- **Dr. K. Sekar, Internship Activity Coordinator** has 25 years of teaching experience and expertise in the welding industry. He holds degrees in Physics, Production Engineering, Manufacturing Engineering, and a Ph.D. in Manufacturing and Nanomaterials. He has published 80 journal articles, 60 conference papers, guided 70

projects, produced 5 Ph.D.s, and is mentoring 5 scholars. With 3 granted patents, awards from WRC (2018) and DTC (2018), his research contributions are widely recognized

- **Social Media Coordinator: Dr. Ilanila I. P.**



Dr. Ilanila I. P. is an Assistant Professor (Grade II) in the Department of Bioscience and Engineering at the National Institute of Technology Calicut (NIT Calicut), India. She earned her Bachelor's degree in Biotechnology from Kamaraj College of Engineering and Technology, Virudhunagar, followed by a Master's degree in Industrial Biotechnology from National Institute of Technology Karnataka, Surathkal, and a Ph.D. from the Centre for BioSystems Science and Engineering, Indian Institute of Science, Bengaluru in 2021. Dr. Ilanila joined NIT Calicut as an Assistant Professor in 2022 and has since been a part of this institution.

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

- Total No. of IIC Members : **104**
- Total No. of IAs : **66**
- Total No. of faculty Mentors from Portal : **29**
- Pre-Incubation Units:

PRAYAS Centre: 2 employees, Area of the facility: 3000 Sq. feet

- Incubation Units:

Technology Business Incubator:

4 employees, Area of the facility: 8000 Sq. feet, fab lab and other equipment like 3D Printer with Workstation, 3D Scanner with PC, PCB Milling/ Engraving Machine, CNC Router Machine, Laser Cutter, Electronic Work Bench (3Nos.), Electronic Design Software with work station, Pick & Place Machine, Soldering & De Soldering Station, Scroll Saw, Vinyl Plotter- 4 Feet Machine, Sand Blasting/ Blaster Machine, CVD apparatus, Laminar Air Flow, Autoclave, Hot air oven, Electronic Balance and Refrigerated Centrifuge.

MSME Incubation Centre: The MSME Innovative Scheme fosters untapped creativity, supports proof-of-concept validation, and enables MSMEs to adopt new technologies with guidance in design, strategy, and execution for business expansion.

TIDE Centre: The TIDE Centre at NIT Calicut, established in 2004, supports startups by fostering innovation through incubation, funding, office spaces, and Fab Lab facilities for prototype development and commercialization.

- **IP Facilitation Unit, if any:**

IPR Cell of the Institute: The IP Facilitation unit is working under the dean research and consultancy office and the manpower constitutes of the IPR Coordinator (Dr. Noel Jacob) and is assisted by the section officer and 3 clerks at the Dean (R&C) office.

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

- **Infrastructure under Pre-incubation and incubation:**

The student clubs that are associated with innovation and entrepreneurship are NOVA Club, AI Club, IEDC, Team Unwired, Club Aero Unwired, Club Innovation and Robotics Interest Group. Out of these, NOVA Club and AI Club were formed by the students post attending the IIC sessions organised within the institute.

- In addition to this, various research laboratories with cutting edge facilities that function in the institute are also made available for the innovators and entrepreneurs. Some of such labs are Bioinorganic/Biomimetic Inorganic Chemistry, Organic Synthesis and Catalysis Laboratory, Laboratory for Advanced Materials and Applied Research, Mechatronics/Robotics Lab (Robotics Interest Group), Metrology Lab, Tribology and Vibration Laboratory, Durability Lab, Membrane Research Lab, Chemical Technology Lab Environmental Engineering Lab, Diamond and related material Laboratory, Opto Fluidics and Interface Science Laboratory, Gas Sensor Lab, Advanced Wireless Communication Lab, High Voltage Lab, Thermal Science Lab, Applied NANO engineering lab, Organic and nano electronics lab and Photonics Materials and Devices Lab.
- **Mentor & Mentee program:** A total of 12 progress monitoring meetings were conducted, with all 5 mentors visiting their respective institutes in person to assess the progress of IIC activities at their mentee institutes. These site visits allowed the mentors to provide hands-on guidance and ensure that the activities were on track, facilitating effective oversight and support for the ongoing projects. The total expenditure for the mentor-mentee program was ₹1,51,488/-, leaving a balance of ₹76,724/- from the total budget of ₹2,28,212/-.

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

- Number and Different types of I&E and IPR activities Conducted

Quarter-1		
S No	Category	Session
1	IIC Calendar Activities	Workshop on “Entrepreneurship and Innovation” as a Career Opportunity
2		My Story - Motivational Session by Successful Innovators
3		From Idea to Impact - Motivational Session by Successful Entrepreneur/Start-up Founder
4		Session on Problem Solving and Ideation Workshop
5		Session on the “Basics of Intellectual Property Rights and its Importance for Innovators and Entrepreneurs”.
6		Exposure and Field Visits for Problem Identification: Aligning with UN SDGs and Exploring Emerging Areas of Technologies
7		Organize an Inter/Intra Institutional Idea Competition/ Challenge/ Hackathon, and Reward the Best Ideas and deposition in the Institution’s YUKTI Innovation Repository
8		Idea Showcase: Demo Day/Exhibition/Poster Presentation of Ideas/PoC & linkage with Innovation Ambassadors/Experts for Mentorship Support.
9	MIC Driven Activities	Session on MIC Programmes & Schemes with Dr. Abhay Jere
10	Self-Driven Activities	At least two activities per
11	Celebration Activities	Innovation Day
12		National Education Day
13		National Entrepreneurship Day
Quarter 2		
1	IIC Calendar Activities	Workshop on Design Thinking, Critical thinking and Innovation Design
2		Organizing Innovation & Entrepreneurship Outreach Program in Schools by engaging active Atal Tinkering Labs and School Innovation Council (SIC)
3		Organize an Expert talk on Process of Innovation Development, Technology Readiness Level (TRL); Commercialization of Lab Technologies & Tech-Transfer
4		Workshop on Effective Sales and Marketing Strategies for Entrepreneurs /Startups
5		Conduct a Session on Achieving Problem-Solution Fit and Product-Market Fit
6		Field/Exposure Visit to Pre-incubation units such as AICTE Idea Lab, Fab lab, Makers Space, Design Centers, City MSME clusters, workshops etc.
7		Organize an Inter/Intra Institutional Innovation Competition/Challenge/Hackathon and Reward the Best Innovations and deposition in the Institution’s YUKTI Innovation Repository
8		Innovations Showcase: Demo Day/Exhibition/Poster Presentation of Innovations/Prototypes & linkage with Innovation Ambassadors/Experts for Mentorship Support
9	MIC Driven Activities	

10	Self Driven Activities	A total of 10 Programs are proposed under this category by the IAs
11	Celebration Activities	National Pollution Control Day-2nd December
12		National Energy Conservation Day (India)-14th December
13		National Youth Day-12th January
14		National Startup Day-16th January
15		National Science Day-28th February
Quarter 3		
1	IIC Calendar Activities	Workshop on Prototype/Process Design and Development.
2		Session/ Workshop on Business Model Canvas (BMC)
3		Field/Exposure Visit to Incubation Unit/Patent Facilitation Centre/Technology Transfer Centre such as Atal Incubation Centre etc.
4		Session on “How to plan for Start-up and legal & Ethical Steps”
5		Workshop on “Raising Capital and Managing Finance for Startups”
6		Workshop on “Protecting Intellectual Property Rights (IPRs) and IP Management for Startups”
7		Organize an Inter/Intra Institutional Business Plan Competition and Reward the Best Innovations and deposition in the Institution’s YUKTI Innovation Repository
8		B-Plan Pitch: Demo Day/Exhibition/Poster Presentation of Business Plans & linkage with Innovation Ambassadors/Experts for Mentorship Support.
9	MIC Driven Activities	6 MIC driven Activities are given.
10	Self Driven Activities	6 Programs are proposed under this category by the IAs
11	Celebration Activities	International Women’s Day
12		World Creativity and Innovation Day
13		World Intellectual Property Day
14		National Technology Day
Quarter 4		
1	IIC Calendar Activities	Session on Innovation/Prototype Validation – Converting Innovation into a Start-up or Session on Achieving “Value Proposition Fit” & “Business Fit”
2		Session on Accelerators/Incubation -Opportunities for Students & Faculties – Early-Stage Entrepreneurs”
3		Organize Session on “Lean Start-up & Minimum Viable Product/Business”- Boot Camp (or) Mentoring Session
4		Session on Angel Investment/VC Funding Opportunity for Early-Stage Entrepreneurs.
5		Session/ Panel discussion with innovation and Start-up Ecosystem Enablers from the region/state/national level
6		Organizing Innovation & Entrepreneurship Outreach Program by involving ATLs/SICs in Schools
7		Organize an Inter/Intra Institutional Start-up Competition and Reward the Best Start-ups and deposition in the Institution’s YUKTI Innovation Repository
8		Startup Summit: Demo Day/Exhibition/Poster Presentation of Start-Ups & Linkage with Innovation Ambassadors/Experts for Mentorship Support
8	MIC Driven Activities	Podcast Series on “Rashtra Pratham” and “Celebrating Failures”
9	Self Driven Activities	Five Programs are proposed under this category by the IAs

10	Celebration Activities	World Entrepreneurs Day
12		World Environment Day
13		5th Anniversary of National Education Policy (NEP) 2020
14		Independence Day- Celebrating Aazadi Ka Amritkal

- Along with the activities conducted under the Institution's Innovation Council (IIC), the Centre for Innovation, Entrepreneurship and Incubation (CIEI) at NIT Calicut has also been actively organizing impactful programs that foster innovation and entrepreneurship among students and faculty. Notable initiatives include the Innovation and Entrepreneurship Development Centre (IEDC), which nurtures entrepreneurial talent at the grassroots level, the Capacity Building for Design and Entrepreneurship (CBDE) workshops that promote design thinking and entrepreneurial skills, and EKASVA, a flagship program designed to showcase and support innovative ideas and startups. These initiatives, along with several other programs, reflect CIEI's commitment to creating a vibrant innovation and startup ecosystem within the institute.
- No. of students & faculty ideas generated – 57

Sl. No.	Title	Innovators	Department
1	Hardware in the loop testing of Power Converters	Linda Mary Zacharia	Electrical Engineering
2	Solid-lattice fins arranged in a bio-inspired Fibonacci sequence in phase change material module for Lithium-ion battery thermal management system	Sathyasree V	Mechanical Engineering
3	Development of Infilled Rectangular Hollow Beams With Enhanced Impact and Vibration Resistance	Nandu Krishnan R	Civil Engineering
4	Optimizing template free fabrication of mesoporous microstructures using natural polyphenol assembly for biomedical applications.	Vivek Krishnan Ms	Physics
5	Nature derived 3D bioprinted patch for diabetic wound healing application	Mohammed Hanan	Bioscience and Engineering
6	Development of Diagnostic instrument for classification of transformer oil	Sourish Nandy	Electrical Engineering
7	Design, Development and Testing of Hybrid MR Actuator	Abin Sajan	Mechanical Engineering
8	Electrospun Adsorbent Membrane for Rare Earth Element	Nandagopal M	Chemical Engineering
9	Development of biomodified electrochemical sensor for the detection of heavy metals	Christeena Benny	Chemical Engineering
10	Fabrication of All Carbon Microheaters by Laser Graphitisation of Photoresists	Adarsh Varikkassery Jagadheesh Chandran	Materials Science and Engineering

11	Development and optimization of advanced catalysts for enhanced performance in Direct Methanol Fuel Cells (DMFCs).	Mohammed Ibrahim Shah M A	Materials Science and Engineering
12	Eco-Pods: An Innovative and Sustainable Gfrp Reinforced Interlocking Concrete Armor Unit for Enhanced Coastal Protection	Mannem Naveen	Civil Engineering
13	Bio-template based PZT microtubes for energy harvesting applications	Baindla Ankitha	Physics
14	Design and Development of Active Head Assistive Device for Children With Severe Motor Neuron Disabilities	Muhammed Aslam	Mechanical Engineering
15	Development of Fibrous Root-Bound Concrete Blocks for Urban Green Building	Akhil Vigneswar M	Civil Engineering
16	Auxetic Pavement Vibration Energy Harvester	Abhishek Kumar Ranjan	Civil Engineering
17	A Novel Broad-Spectrum Cavity-Enhanced Albedometer: A climate Tech Instrument for Atmospheric Pollution Monitoring	Sidharth K S	Physics
18	Short term flood forecasting framework for Meenachil river basin	Nitha V	Civil Engineering
19	Fabrication and testing of flexible antenna for real time monitoring of patients with Parkinson's disease	Abhijith Sivan	Mechanical Engineering
20	Development of sustainable concrete using RCA, Unhydrated cement and plastic waste.	Soham Shriram S Khandeparkar	Civil Engineering
21	Thermal management of CPU processors using Pulsating Heat pipe and Vapor Chamber	Uppununtala Vamshi	Mechanical Engineering
22	Catalytic Degradation of Toxic Pollutants using Noble Metal doped 3-Dimensionally Ordered Macroporous (3DOM) Manganese and Cobalt Oxide Nanoparticles	Sreelekha R Chandran	Chemistry
23	Development of industrial grading and sorting system for coconuts	Sravan Santhosh	Mechanical Engineering
24	Optimization of Thermally Localized Multistage Desalination System	Pithani Baby Saatwika	Mechanical Engineering
25	Preparation and Characterization of Novel Mixed Matrix Polymer Membrane for Room Temperature Gas Separation	Yadhukrishna TR	Chemical Engineering
26	Identification of a Human Toll-Like Receptor (TLR) 2 Specific Agonists in Fused Thiophene Derivatives.	Sivapriya M S	Chemistry
27	Design, Development and Testing of Configurable Multi-Mode Suspension	Kathaan Vora	Mechanical Engineering
28	Enhancing Therapeutic Effectiveness of an Antifungal Drug By Dlp-Based 3D Printing	Parvathy J	Bioscience and Engineering
29	Development of a multi-functional floating absorber solar still with thermal storage	Abhijith P U	Materials Science and Engineering
30	Hybrid Switched Configuration Based Cell Equalization Approach for Lithium-Ion Battery pack	Pranav Ramesh	Electrical Engineering
31	Extracting Value Added Chemicals from Bio-oil derived through Pyrolysis of Lignocellulosic	Shivam Kumar Singh	Chemical Engineering

	Biomass Waste		
32	Ligand Controlled Novel Ruthenium-NHC Catalysts for N-Methylation Reactions using Methanol C1 Source	Adila Sherin K	Chemistry
33	Innovative implementation of expanded polystyrene sandwich wall panel in multi-storey building	Simpson Thomas P S	Civil Engineering
34	Design and Development of Metamaterial Supports for Vibrating Systems	Vishnu Raj	Mechanical Engineering
35	Realisation of Sweat Sensor using Microwave Metasurface	Aleena Antony	Physics
36	Study of CBD blended GGBS based Geopolymer concrete paverblock	Jaza Nk	Civil Engineering
37	Analysis of Pile Supported Wharf Using Sustainable Concrete Alternatives	Farbeena C K	Civil Engineering
38	CPEB-4-H2: Solar powered cyanobacterial photo-electrolysis bioreactor (CPEB) for green hydrogen production from sewage sludge.	Faisal Imroj	Civil Engineering
39	VBCAP (Vision Based Billboard Condition Assessment Platform)	Devansh Srivastava	Civil Engineering
40	Development of a Low-Cost Automated Machine for Kirby-Bauer Disk Diffusion Method	Anuvind P	Electronics & Communication Engineering
41	Quality Assessment of Pepper using Hyperspectral Imaging and Machine	Mohammad Aariz Imran	Electrical Engineering
42	Optimization of Global Semiconductor Supply Chain	Kedar M Kamath	Mechanical Engineering
43	Electrochemical studies on MXene/polymer nanocomposite towards the development of wearable sensors	Anamika K R	Chemistry
44	Design, Synthesis and Photophysical Properties of pH-Responsive Imidazo [1,2-a]pyridine Derivatives.	Lesna Sherin K	Chemistry
45	Analysis and Implementation of High Gain DC-DC Converter with Continuous Input Current for Solar PV Integration.	Vinu Varshath S	Electrical Engineering
46	Fabrication of Perovskite Solar Cells Passivated Using 2D Layered Perovskite for Enhanced Stability	Sanjeev Sajan	Materials Science and Engineering
47	Development of a Novel Hydrodynamic Wave Trap Mechanism to Capture and Transport Floating Debris at Water Bodies	Akshatha Suresh	Mechanical Engineering
48	Design and Development of Self-Healing Auxetic Metamaterial for Dynamic Vascular Grafting	Paritosh Tomar	Materials Science and Engineering
49	Advanced Precision Farming with IoT and AI: Comprehensive System for Crop Optimization and Wildlife Deterrence	Purnami Gopinath	Electrical Engineering
50	Drainage Cleaning Robot	Karthik Jayaraj	Mechanical Engineering
51	Fabrication of Zinc-Nickel Battery Using Electrodeposited Ni(OH) ² cathodes	Arya N	Chemical Engineering
52	Performance of Banana Fibre Geotextiles and Geocells as a Reinforcement in Soil Stabilization	Parvathi Krishnan M	Civil Engineering

53	Design and development of drone propeller optimised using sma for low pressure condition	Abhijith M Y	Mechanical Engineering
54	Structural Health Monitoring Using Engineered Metamaterial Auxetic Composites of Egc, Pla and Tpu	John Thomas V	Civil Engineering
55	Manganese Porphyrin: A Catalyst for the Selective Oxidation of Petrochemical Sulfur Wastes to Useful Oxides	Mohammed Shinan K A	Chemistry
56	Experimental, CFD and AI-driven Shape Optimization of Wave Energy Converter	Zebulun M	Civil Engineering
57	Faucet aerator based supercapacitor integrated triboelectric nanogenerator for green harvesting of mechanical energy	K. Venkat Bharath	Physics

- No. of student's & faculty Innovation/prototypes developed – 14

S. No.	Innovation Title	Team Lead Details
1	LegalNexus.AI: AI-Powered Multilingual Smart Contract & Legal Document Analyzer	Surjith S
2	Design and Development of Metamaterial Supports for Vibrating Systems	Vishnu Raj
3	Development of multifunctional floating absorber still with thermal storage	Abhijith P U
4	Development and Optimization of Advanced Catalysts for Enhanced Performance in Direct Methanol Fuel Cells (DMFCs)	Mohammed Ibrahim Shah M A
5	Fabrication of Perovskite Solar Cells Passivated Using 2D Layered Perovskite for Enhanced Stability	Sanjeev Sajan
6	Design and Development of a Novel Auxetic Metamaterial Vascular Graft for Next-Generation Cardiovascular Applications	P Vishalini
7	Development of Industrial Grading and Sorting system for Coconuts	Sravan Santhosh
8	Coconut Shell Based Bio-composite for Cutlery Application	Joel Antonie Harock
9	Fabrication of all carbon microheaters by laser graphitization of photoresists	Adarsh V J
10	Low-Cost Automated Machine for Kirby Bauer Disk Diffusion Method	Anuvind P
11	Ligand Controlled Novel Ruthenium-NHC Catalysts for N-Methylation Reactions using Methanol C1 Source	Adila Sherin K
12	Standalone MEMS based micro-heating system for in-situ SEM applications	Anhad Rajkhowa
13	Development of web-based production distribution game: Production-Market environment	Rahul E
14	Development of AI/ML based Supply Chain Role Play Game	Midhun A

- No. of IPs generated, published and granted: 75

S. No.	Applicat ion Number	Inventor	Title	Publishe d/Grante d	Patent Number
1	2024410 29524	1. Dr. Aji A Anappara 2. Varsha Sharma	An Edible Event-Responsive Photodetector for Light Intensity Detection and Method of Operation Thereof	Granted	565859
2	2024410 28228	1. Dr. Basil Kuriachen	A Method for Fabricating Biodegradable Magnesium-Based Implants Using A 3D-Printing Process	Published	--
3	2024410 30581	1. Dr. Basil Kuriachen	A Method for Developing Magnesium-Based Multi-Functional Composite Coating for Metallic Bone Implants	Granted	553738
4	2024410 28548	1. Efraem Joji 2. Arjun Krishna K K 3. Dr. Sunitha K 4. Dr Aswathi R Nair	Single-Transformer Power Converter Merging Voltage Regulation and Inverter for A Power Management System	Granted	559832
5	2024410 36089	1. Alosh James 2. Dr. M Mohanraj 3. Dr. M. Srinivas 4. Dr. S. Jayaraj	System and Method of Solar Pv-T Heat Pump Based Water Heating With Uniform Pv Cooling and Enhanced Hot Water Output	Published	--
6	2024410 32905	1. Kalathum Padikkal Arunraj 2. Mr. Abey Joseph 3. Dr. Baiju Govindan Nair	An Effervescent Tablet formulation By A 3D Printing Process and Method of Preparation	Granted	555020
7	2024410 38615	1. Alphy George 2. Shabana A.T 3. Dr. S Sheerazuddin	A Scalable Micro-Aerial Vehicle Surveillance System With A Counter Abstraction Model and Method of Operation	Granted	555375
8	2024410 36992	1. Dr. Sharan Kumar Goudar 2. Mr. Bhukya Vamsi Naik 3. Mr. Yash Kulshrestha 4. Dr. Suman Saha	Steel Plated Grooved Box Section (Spgbs) Anchorage System and Method for Enhancing Railway Sleeper Stability	Published	--
9	2024410 36993	1. Dr. Sharan Kumar Goudar 2. Mr. Yash Kulshrestha 3. Mr. Bhukya Vamsi Naik 4. Dr. Suman Saha	A Rail Sleeper Anchorage System and Method for Enhancing Stability and Stiffness of Rail Sleepers	Granted	568454
10	2024410 40398	1. Dr. Noel Jacob Kaleekkal 2. Hyder Ali Raza 3. Anagha P 4. Joyal Jose	Method To Prepare A Hydrophobic Membrane for Resource Recovery Using Counter-Current Flow Membrane Distillation Module	Granted	556639

11	2024410 36504	1. Dr. Pranesh Das 2. Mrs. Aparna K H 3. Mr. Swamy Raja Hrushikesh 4. Mr. Polineni Ramnivas 5. Mr. Buchupalli Ruthvik Kumar Reddy 6. Mr. Shani Verma 7. Mr. Shiv Om 7. Mr. Deepanshu Kasaudhan 8. Mr. Arun S. Kudakasseril 10. Mr. S. Sudhagar	An Autonomous Drone-Based Intelligent System for Coconut Harvesting and Method Thereof	Published	--
12	2024410 28230	1. Dr. Saikat Chandra Bakshi 2. Ms. Ankita Ray Chowdhury 3. Mr. Avik Kumar Das 4. Dr. Ankita Pramanik 5. Dr. Gopal Chandra Roy	Remote Positioning System for Underground Coal Mines Using Visible Light and Lora Communication	Published	--
13	2024410 47164	1. Harsha Haridas Ellathveetil Swaminathan 2. Dr. Goutam Kumar Chandra 3. Dr. Ravi Varma Mundakkara Kovilakam 4. Dr. Susmitha Bhattacharya	Eco-Friendly Synthesis of Silver Nanoparticles With Coffee Leaves Extract for Cysteine Detection	Published	--
14	2024410 48895	1. Harsha Haridas Ellathveetil Swaminathan 2. Megha Radhakrishnan 3. Dr. Goutam Kumar Chandra 4. Dr. Ravi Varma Mundakkara Kovilakam	Method for Preparing Grass-Derived Multifunctional Nanomaterial Reinforcing Agents In Biopolymer Packing	Granted	562219
15	2024410 48453	1. Dr. Aji A. Anappara 2. Anupama M	A Method for Fabrication of Pristine Vanadium Monocarbide Quantum Dots for Reduction of Nitrobenzene	Granted	565289
16	2024410 38014	1. Dr. Sudev Das 2. Aiswarya. V	A Novel Corrugated Heat Sink With Hybrid Co-Filler Interfaced Microcapsules for Effective Thermal Management In Electronic Devices	Granted	555685

17	2024410 46937	1. Dr. S. Krishnanunni 2. Dr. Jinu Paul	A Ventilated Disc Brake Coated With Graphene-Wrapped Rutile-Tio2 Infused Aluminum Alloy and Method of Manufacturing	Granted	557402
18	2024410 51670	1. Mahi Teja Talluri 2. Dr. V. Karthikeyan 3. Gouri Sankari S 3. Anupama Asha 4. Harikrishnan G Kaimal 6. Gourishetty Soumya	A Switched Inductor With Current Shared Network Dc-Dc Converter for On-Board Electric Vehicle Charger	Granted	563278
19	2024410 51671	1. B. Sibin 2. Dr. K. Sekar 3. S. Krishna Narayan	A Multi-Layered Graphene Encapsulated High-Entropy Alloy Reinforced Metal Matrix Composite and Methods of Fabrication Thereof	Granted	562424
20	2024410 48454	1. Dr. A. P. Sudheer 2. Mr. Meby Mathew 3. Mr. Kishore S	A Robotic Exoskeleton Device for Wrist Hand Rehabilitation and Method of Operating The Same	Published	--
21	2024410 48455	1. Dr. Sudheer A. P 2. Hemanth Sankar P 3. Srirangam Raj Harshit 4. Nikhil Karna	A Compliant Robotic End-Effector With force Multiplication Mechanism for Efficient Object Manipulation	Published	--
22	2024410 52896	1. Dr. Jagadeesha T 2. Dr. Amit Kumar Singh 3. Satyam Gupta, 4. G. V. Divya Srita 5. Nikhil Anil 6. Jerin A Peter	A Synthesis of Non Edible Oil Based Magnetorheological Fluid With Enhanced Lubricity	Published	--
23	2024410 53541	1. Mohammad Ahad Ansari 2. Dr. Jagadeesha T	A Multi-Bio Coating Orthopaedic Implant With Enhanced Cell Adhesion and Method for Preparing The Same	Granted	561370
24	2024410 53423	1. Dr. Aji A. Anappara 2. Dr. Haribabu Krishnan 3. Anupama M 4. Juliana John 5. Karnapa Aji	Fabrication Method of Vanadium Monocarbide Nanosheets As Efficient Anode Catalysts for Single-Chamber Microbial Fuel Cells	Granted	560607
25	2024410 55679	1. Dr. Subha D Puthankattil 2. Aswin Sekhar C S 3. Amal Raj	An Advanced System and Method for Diagnosing Mental Health Conditions Using Electroencephalogram Signal Analysis	Published	--
26	2024410 56683	1. Dr. C. N. Shyam Kumar 2. Mohammed Mudassir 3. Bushair Ali. K	Fabrication of Piezoresistive Sensors Using Pyrolyzed Coconut Fiber and Method Thereof	Published	--
27	2024410 56682	1. Dr. M. K. Ravi Varma 2. Salma Jose 3. Sarath C J	Led-Based Spherical Integrating Nephelometer With Minimized Truncation Error for Aerosol Light Scattering Measurements	Published	--

		4. Abijith K Reju	and Method Thereof		
28	2024410 56681	1. Dr. M. K. Ravi Varma 2. Salma Jose, 3. Keerthana V. A 4. Adithya Danaj	A Folded Broadband Optical Resonator Spectrometer for Trace Gas Detection With High Sensitivity and Method Thereof	Published	--
29	2024410 61136	1. Shanker Krishnan 2. Dr. Sujith Kumar CS 3. Ashish Chandran. K 4. Dr. Arun Kumaradas Raj	Multi-Stage Parallel Desalination System With Integrated Thermal Management for Waste Heat Recovery and Method Thereof	Published	--
30	2024410 56121	1. Harsha Haridas Ellathveetil Swaminathan 2. Megha Radhakrishnan 3. K. Venkat Bharath, 4. Dr. Goutam Kumar Chandra 5. Dr. Ravi Varma Mundakkara Kovilakam	A Template-Free Method for Synthesizing Biocompatible Nanoporous Microstructures	Granted	560261
31	419527- 001	1. Dr. Sharan Kumar Goudar 2. Mr. Yash Kulshrestha 3. Mr. Bhukya Vamsi Naik 4. Dr. Suman Saha	Railway Sleeper Anchorage System	Granted	--
32	419528- 001	1. Dr. Sharan Kumar Goudar 2. Mr. Yash Kulshrestha 3. Mr. Bhukya Vamsi Naik 4. Dr. Suman Saha	Steel Plated Grooved Box Section (Spgbs) Anchorage System	Published	--
33	2024410 44738	1. Dr. Saikat Chandra Bakshi 2. Mr. Avik Kumar Das 3. Ms. Ankita Ray Chowdhury 4. Dr. Ankita Pramanik 5. Dr. Palaniandavar Venkateswaran 6. Mr. Suvankar Bose	An Internet of Underwater Things (Iout)-Based Water Quality Monitoring System and Method of Operation	Published	--
34	2024410 62617	1. Dr. Nikhil Sasidharan 2. Dr. Rijil Ramchand 3. Muhammedali Shafeeque K	A High-Gain Single-Stage Buck-Boost Inverter With Enhanced Dc Utilization	Granted	561953
35	2024410 62614	1. Dr. Nikhil Sasidharan 2. Dr. Jagadanand Gangadharan 3. Kannan S A	High-Efficiency Field-Oriented Control System With Asymmetrical Cascaded H-Bridge Multilevel Inverter for	Published	--

			Enhanced Pmsm Performance		
36	2024410 44971	1. Dr. Nikhil Sasidharan 2. Kannan S A 3. Renuka V S 4. Frieda Mohan	Back-Stepping Controller Based Droop-Free Control System for Parallel Dc Distribution With Improved Stability and Transient Response	Published	--
37	2024410 62913	1. Dr. A. Sujith 2. Smitha Manholi 3. Dr. Saeed P A 4. Ardra Ashok K P	A Method for Synthesizing Biodegradable Hydrogel Fertilizer for Controlled Release and Efficient Matrix Nutrient Utilization	Granted	567712
38	2024410 60266	1. Dr. Sivasubramanian Velmurugan 2. Khansa Rahman 3. Afrah Kuzhivayalil 4. Battamekala Pranay Kumar, 5. Bhavanasi Sai Swaroop	Pseudomonas Aeruginosa Mediated Synthesis of Water-Soluble Colloidal Quantum Dots for Photocatalytic Reduction of Chromium	Published	--
39	2024410 63167	1. Dr. S. K. Pramada 2. Megha Mohan	Method for Fabricating A High-Performance Composite Desalination Membrane With Enhanced Water Flux and Salt Rejection	Published	--
40	2024410 64205	1. Dr. Maneesh Chandran 2. Swathi A. C	Method for Preparing Hydrophobic Graphitic Carbon Nitride-Coated Natural Rubber Foam for Oil-Water Separation	Granted	563121
41	2024410 69121	1. Dr. Praveen Nagarajan 2. Arjun Raj P K	Composition and Method for Fabricating Ternary Blend Geopolymer Concrete Blocks for High-Temperature Applications	Granted	563015
42	2024410 69939	1. Dr. Anantha Singh Thankappan Sarasvathy 2. Mr. Saji Simon Chalakkal	A Method for Fabricating Biomass-Derived Electrodes for Electrochemical Advanced Oxidation Processes	Granted	563340
43	2024410 72106	1. Dr. C. N. Shyam Kumar 2. Arun V	Microheaters Design and Fabrication Using Two-Step Laser Graphitization Method for Superior Thermal Performance and Durability	Published	--
44	2024410 66028	1. Dr. Jagadeesha T 2. Dr. Amit Kumar Singh 3. Siddharth Rahul Dikondwar 4. Nishant Dabetwar 5. Himanshu Moojoriya	Magnetorheological Fluid-Based Rotary Damper for Real-Time Suspension Damping Adjustment and Method of Operation	Published	--
45	2024410 71499	1. Dr. K. Sekar 2. Mr. S. Sathyaraj	A Method for Synthesis of Bio-Sourced Epoxy Vitrimer for Enhanced Toughness and Recyclability	Published	--

46	2024410 74580	1. Dr. V. Karthikeyan 2. Mahi Teja Talluri 3. Sanjana Vaddepally	Double Switching Capacitor Network (DSCN)-Based DC-DC Converter for Charging On-Board Electric Vehicle and Method Thereof	Published	--
47	2024410 84734	1. Dr. Sudheer A P 2. Gayathri Sandeep 3. Celine Wilson 4. Azhar P Ilyas 5. Saurav P	A Multi-Functional Reconfigurable Protection Device and Method of Operating the Same	Published	--
48	2024410 84733	1. Dr. Sudheer A. P 2. Rohith Poola 3. Mamidi Thejonath 4. Akondi Sai Manoj	Robotic System for Harvesting Crops in Vertical Farms and Method Thereof	Published	--
49	2024410 84735	1. Dr. Sudheer A.P. 2. Muhammad Basil 3. Vattamannathodi 4. Najath Thoombath 5. Somu Bala Upendra Reddy 6. Pulapakura Apuroop	Multi-Rotor Unmanned Aerial Vehicle (UAV) for Performing Smart Farming to Increase Agricultural Production and Method Thereof	Published	--
50	2024410 84732	1. Dr. Sudheer A. P, 2. Hemanth Sankar P 3. Srirangam Raj Harshit, 4. Nikhil Karna	An Autonomous Swab Sampling Robotic System and Method of Operating the Same	Published	--
51	2024410 96157	1. Dr. Sudev Das 2. Johnsan R	A Method for Preparing Copper-Nickel-Tungsten Deposits for the Enhancement of Heat Transfer Coefficient of Deionized Water	Published	--
52	2024410 92935	1. Dr. Vinod Kumar Sharma 2. Mr. K Kishor Kumar 3. Mr. Kakumanu Suvarna Jaya Prakash 4. Badiganti Chandra Mouli 5. Siddhartha K 6. Bhavesh Srirangam 7. Dr. Kaushlendra Sharma	A Voice Alert Agricultural Monitoring System for Alerting Users of Agricultural Parameters and Method Thereof	Published	--
53	2024410 73002	1. Dr. Vinod Kumar Sharma 2. Mr. Josy James 3. Mr. Mohammed Faheem T 4. Mr. Jinto Francis PB 5. Mr. Kakumanu Suvarna Jaya Prakash 6. Dr. A. Shaija	A Metal Hydride-Based Reactor System With Optimized Gas Distribution for Enhanced Hydrogen Purification	Published	--
54	2024410 92936	1. V. Nirupam, 2. A. Bakhirathan 3. Dr. Gangadhara Kiran Kumar L	Thermal Management Device for High-Power Chip-On-Board LEDs Using Radial Heat Sinks with Micro-Pulsating Heat Pipes	Published	--

		4. Dr. Rohinikumar B			
55	2024410 93293	1. Suthesh P M, 2. Roshen Thomas 3. Dr. Rohinikumar B 4. Dr. Gangadhara Kiran Kumar Lachireddi	A Battery Thermal Management System with a Phase Change Fluid and a Thermally Conductive Layer	Published	--
56	2025410 14730	1. Dr. Jayadeep U B 2. Dr. Arun Babu K 3. Sivapriya S Nair 4. Churathil Anandhu 5. Anandakrishnan 6. Hari Krishnan Sudheendran, 7. Justin Koottozhuthil Thomas	A Portable Video Extensometer System for Real-Time Strain Measurement in Soft Membranes	Published	--
57	2025410 19070	1. Varsha Sharma 2. Aji A. Anappara	Artificial Opto-Ionotronic Synaptic Device	Published	--
58	2025410 25789	1. Justin Jose 2. Nikhil Kumar CS	A Millimeter Wave Apparatus for Measuring Soil Content Parameters With Ultra High Sensitivity	Published	--
59	2025410 17627	1. Dr. Sekar K 2. Dr. Vasanthakumar Pandian	A Mechanical Agitating Device for Manufacturing Metal Matrix Composites	Published	--
60	2025410 08301	1. Lalit Kumar 2. Shameer Keelaillam	A Polarization Reconfigurable Aperture-Coupled Octagonal Star Patch Antenna On A Substrateintegrated Suspended Line Platform	Published	--
61	2023410 35044	1. Eldho Naveen Jose 2. Emil Ninan Skariah 3. Deepu E Koshy 4. Dr. Sindhu T K	Pulsed Power Supply Device With A Double-Ended forward Converter Topology for Non- Thermal Plasma Applicationsequence Power Supply for Non-Thermal Plasma Generation	Granted	557647
62	2023410 74688	1. Dr. Janardhan Banothu 2. Ms. Neethu Mariam Thomas	6-Fluoro-4-Hydroxy-2-Oxo-1,2- Dihydroquinoline-3-Carboxamide Derivatives As Chemotherapeutic Agents and Synthetic Method Thereof	Granted	557540
63	2024410 10310	1. Mr. Saugato Dey 2. Dr. Sunil Kumar T.K 3. Dr. Ashok. S	Multi-Axis Inertial Stabilization Platform With Robust Reduced- Order Control Strategies for Trajectory Tracking Amid Uncertain Disturbances	Granted	559283
64	2024410 28548	1. Efraem Joji 2. Arjun Krishna K K 3. Dr. Sunitha K 4. Dr Aswathi R Nair	Single-Transformer Power Converter Merging Voltage Regulation and Inverter for A Power Management System	Granted	559832

65	2024410 48895	1. Harsha Haridas Ellathveettil Swaminathan 2. Megha Radhakrishnan 3. Dr. Goutam Kumar Chandra 4. Dr. Ravi Varma Mundakkara Kovilakam	Method for Preparing Grass-Derived Multifunctional Nanomaterial Reinforcing Agents In Biopolymer Packing	Granted	562219
66	2024410 46937	1. Dr. S. Krishnanunni 2. Dr. Jinu Paul	A Ventilated Disc Brake Coated With Graphene-Wrapped Rutile-Tio2 Infused Aluminum Alloy and Method of Manufacturing	Granted	557402
67	2024410 51670	1. Mahi Teja Talluri 2. Dr. V. Karthikeyan 3. Gouri Sankari S 4. Anupama Asha 5. Harikrishnan G Kaimal 6. Gourishetty Soumya	A Switched Inductor With Current Shared Network Dc-Dc Converter for On-Board Electric Vehicle Charger	Granted	563278
68	2024410 51671	1. B. Sabin 2. Dr. K. Sekar 3. S. Krishna Narayan	A Multi-Layered Graphene Encapsulated High-Entropy Alloy Reinforced Metal Matrix Composite and Methods of Fabrication Thereof	Granted	562424
69	2024410 53541	1. Mohammad Ahad Ansari 2. Dr. Jagadeesha T	A Multi-Bio Coating Orthopaedic Implant With Enhanced Cell Adhesion and Method for Preparing the Same	Granted	561370
70	2024410 53423	1. Dr. Aji A. Anappara 2. Dr. Haribabu Krishnan, 3. Anupama M 4. Juliana John, 5. Karnapa Aji	Fabrication Method of Vanadium Monocarbide Nanosheets as Efficient Anode Catalysts for Single-Chamber Microbial Fuel Cells	Granted	560607
71	2024410 56121	1. Harsha Haridas Ellathveettil Swaminathan, 2. Megha Radhakrishnan 3. K. Venkat Bharath 4. Dr. Goutam Kumar Chandra 5. Dr. Ravi Varma Mundakkara Kovilakam	A Template-Free Method for Synthesizing Biocompatible Nanoporous Microstructures	Granted	560261
72	2024410 62617	1. Dr. Nikhil Sasidharan 2. Dr. Rijil Ramchand 3. Muhammedali Shafeeque K	A High-Gain Single-Stage Buck-Boost Inverter With Enhanced Dc Utilization	Granted	561953
73	2024410 64205	1. Dr. Maneesh Chandran 2. Swathi A. C	Method for Preparing Hydrophobic Graphitic Carbon Nitride-Coated Natural Rubber	Granted	563121

			Foam for Oil-Water Separation		
74	2024410 69121	1. Dr. Praveen Nagarajan 2. Arjun Raj P K	Composition and Method for Fabricating Ternary Blend Geopolymer Concrete Blocks for High-Temperature Applications	Granted	563015
75	2024410 69939	1. Dr. Anantha Singh Thankappan Sarasvathy 2. Mr. Saji Simon Chalakkal	A Method for Fabricating Biomass-Derived Electrodes for Electrochemical Advanced Oxidation Processes	Granted	563340

- No. of Student & Faculty Start-ups/Ventures established: **17**
- Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus: ₹16,00,000/- (Rupees Sixteen Lakhs)
- Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR: ₹50,00,000/- (Rupees fifty Lakhs Only)
- No. of Technology Transfer and Commercialization happened: **2**

Sl. No.	Technology	Technology transferred	Innovator
1	Solid State Transformer	Kerala electrical and allied engineering Co. Ltd	Dr. Ashok. S Dr. Kumaravel, S
2	Diabetic friendly Edible cutlery	Under Process	Dr. Lisa Sreejith

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

- **Dr. Indumathi Sathisaran**, Assistant Professor in the Department of Bioscience and Engineering has received the prestigious Indian National Science Academy (INSA) Visiting Scientist Award 2024 – 2025.
- **Dr. Vrinda Varma**, Assistant Professor in the Department of Humanities, Arts & Social Sciences (HAS) has won PEN America Literary Grant 2024 for the translation in progress of the novel 'Alingam' by Dr. S Girish Kumar which was shortlisted for the DC Literary Award 2018.
- **Dr. V. Sivasubramanian**, Professor, Chemical Engineering, NCOE Award 2023 Winner for Institute of National Importance - @IIT Delhi.
- IIC Students in the NITC's Robotics Interest Group (RIG) achieved remarkable success at ROBOCON 2024, securing 14th rank and outperforming IITs and NITs.

G. Highlight selected best Innovations & images with mention of inventor/innovation name

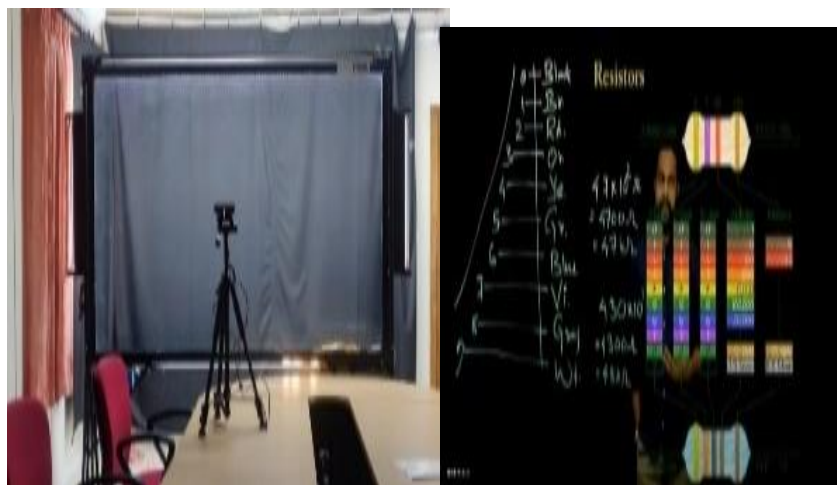
- **Modular Robot Assisted Rehabilitation Device (Sri. Amarnath)**

A single modular device that can be used to assist therapist to do physiotherapy in multiple joints depending on the needs of the therapy. Multiple on-board sensors enable the therapist to keep track of how the patient is responding and improving to the therapy process.



- **Smart Glass for Smart Class (Dr. Arun R)**

Transforming digital education through Lightboard for teaching—enhancing clarity, engagement, and visual communication in every learning experience. Enabling face-to-face instruction that bridges traditional teaching and modern e-learning.



- **Waste to Wealth industrial waste management (Sri. Akhil Raj & Dr. Sajith. V)**

CorroShield-ECO dual-action nano-composite sustainable additive for marine hull coating using recovered industrial air-pollutant. (Anti-Corrosive + Anti-Biofouling)



- **Water generator and purifier Atmospheric water generators (AWGs) under the brand name AGUAER.** These devices extract pure water from atmospheric humidity. Their products include various AGUAER models, such as the 20L PX, 70L, 100L, and 250L per day units, and they also offer industrial-scale AWG systems.



- **Microwave based - Multiple Magnetron Heating system (Dr. Priya Rao)**

MuMaH has low capacity magnetrons based on a central rotating shaft that works under vacuum. The innovation utilizes the incorporation of multiple low capacity magnetors in a single reactor chamber MuMaH can be used for drying bio degradable materials such as food, food waste fruits, vegetables sea food. etc., to get value added dehydrated products.



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

I.

Sl. No.	Title of the startups	Innovators	Details
1	Storilab System Technologies Llp	Sri. Subair	Storimart Wholesale ordering apps: Storimart is an innovative cloud-based B2B E-Commerce software platform that enables seamless communication between wholesalers and retailers. By integrating the latest technology with our web, desktop & mobile applications, we ensure that you are in control of your business by saving on time, added costs and annoying middle men. Solely built for Warehouse & Shop owners, it is a future-proof sales network.
2	Better Shark Technologies	Sri. Althaf Rahman	Product recommendation platform: They building a platform where consumers can easily find the right product based on their needs. The platform will be capable of interacting with the consumers to understand their requirements and recommend the best product that fit their needs.
3	Infobreez Technologies Llp	Sri. Yahya Kammakutty	BusiMate Cloud ERP: BusiMate can be used at multiple levels of the organization or a chain of businesses, to provide end-to-end visibility for Manufacturing units/Distributors, into the consumption pattern and end user acceptance of their products, to adapt their production plan to market demand.

4	Nawe Robotics Pvt. Ltd.	Sri. Amarnath	Modular Robot Assisted Rehabilitation Device: A single modular device that can be used to assist therapist to do physiotherapy in multiple joints depending on the needs of the therapy. Multiple onboard sensors enables the therapist to keep track of how the patient is responding and improving to the therapy process.
5	Chemrawtech Opc Pvt. Ltd.	Sri. Abdul Habid	Automobile Polishing compound/chemical: Nano ceramic surface coatings, where science and advanced technology collide. Ceramic coating bonds to metallic and polymer surfaces at a molecular level, filling in nano-pores and forms a hard coating that offers excellent scratch resistance and super hydrophobicity. Chemrawtech develop ideal coating solutions that are designed uniquely for automotive, marine, aviation and other industrial applications.
6	Amigoz Technologies Pvt. Ltd.	Sri. Akbar	Water generator and purifier: Atmospheric water generators (AWGs) under the brand name AGUAER. These devices extract pure water from atmospheric humidity. Their products include various AGUAER models, such as the 20L PX, 70L, 100L, and 250L per day units, and they also offer industrial-scale AWG systems
7	Broken Pi	Sri. Manoj Sudarsan	learning disability correction platform
8	Triophore Information Technologies Pvt. Ltd.	Sri. Venu S Dharan	Block chain based ERP/IT software development services custom web and mobile apps, hardware development for embedded systems, and expertise in AI/ML, Blockchain, and IoT for various industries such as healthcare and electric vehicles. They also have a dedicated E-store to promote their products.
9	Vegaur Technologies Pvt. Ltd.	Sri. Muhammed Nadheem	Healthcare
10	Nlightened Zen Solutions Pvt. Ltd.	Dr. Arun R	Smart Glass for Smart Class: Transforming digital education through Lightboard for teaching—enhancing clarity, engagement, and visual communication in every learning experience. Enabling face-to-face instruction that bridges traditional teaching and modern e-learning.
11	Grafito Innovations	Sri. Abel	Grafito Innovations offers products for automating horticulture processes, including the EasyGraft Professional Pocket Grafting Tool (a manual tool) and the semi-automated SAGM-01 and fully automated FAGM-01 robotic grafting machines for large-scale seedling production. The company focuses on precision robotics, computer vision, and AI to increase efficiency and yield in plant grafting for farmers and nurseries.
12	Neiox Eco Cycle	Sri. Akhil Raj & Dr. Sajith. V	Waste to Wealth industrial waste management: CorroShield-ECO dual-action nano-composite sustainable additive for marine hull coating using recovered industrial air-pollutant. (Anti-Corrosive + Anti-Biofouling)

13	Argonite Innovations Pvt. Ltd.	Sri. Sajjad Hussain	Course discovery platform/Ed-tech
14	Sri. Emil Ninan Skariah	Sri.Emil Ninan Skariah	Design and Development of Non-Thermal Plasma Based Disinfection Device for Solid Surfaces: Disinfection device using cold plasma jet generated from dielectric barrier discharge reactor. The product works on the principle of Non-Thermal Plasma, generated as plasma jet using dielectric barrier discharge reactor. This cold plasma jet is used to disinfect the micro-organisms by oxidizing the DNA and protein layers of the bacteria and viruses using the excited electrons, reactive oxygen and nitrogen species present in the NTP.
15	Dr. Anantha Singh T.S.	Dr. Anantha Singh T.S.	Scale-up of Electrochemical reactor for the treatment of Industrial waste water: The product is a single integrated reactor for the decentralised complete treatment of industrial wastewater. Based on the variation in the wastewater characteristics, the electrode area, current density, reaction time, Fenton catalyst, chelating agent concentration, etc., will be automatically sensed and adjusted within the system
16	Dr. Baiju G Nair	Dr. Baiju G Nair	Detection of parasites using optical sensing: a device that utilizes laser magnetometry to instantly detect Plasmodium falciparum and accurately diagnosing the presence of the parasite, for rapid and reliable malaria detection.
17	Dr. Raghu C. V	Dr. Raghu C. V	A low cost automated Hematoxylin and Eosin (HE) Staining Machine: Hematoxylin and eosin (HE) staining is a staining (colouring) method used in histopathology to highlight different components of tissue, such as nuclei, cytoplasm, and extracellular matrix. It is widely used in the diagnosis and research of cancer and other chronic diseases.

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

1. **Minister visits Plastic to power plant at NIT Calicut.** Minister for Local Self Government, Rural Development and Excise Shri. M B Rajesh visited the National Institute of Technology Calicut (NITC) to inspect its Plastic to Power (P2P) plant and discuss potential collaboration with NITC for sustainable plastic waste management. The visit was to explore how the government's Suchitwa Mission could work with NITC to set up similar scaled-up plants, utilizing the institute's patented technology to convert various types of plastic waste into power

Eyeing collaboration, minister visits 'Plastic to Power' plant at NIT-C

EXPRESS NEWS SERVICE
@Kozhikode

EXCISE Minister M B Rajesh on Friday visited the Plastics to Power (P2P) plant at National Institute of Technology Calicut (NIT-C) to discuss the feasibility of collaboration in the patented technology of the institute for plastic conversions. He was accompanied by Additional Chief Secretary Sarada Muralaiah, Suchitwa Mission executive director K.T. Balabhaskaran, (director (solid waste management) Jyothish Chandran G and a team of officials from the department of local self-government and Kozhikode corporation.

"We have a waste treatment facility to recycle plastic but the major issue we face is the



Minister M B Rajesh on his visit to 'Plastic to Power' plant at NIT-C on Friday

huge quantity of rejected waste," said the minister during the discussion with NIT-C director Prof. Prasad Krishna and other experts.

NIT-C commissioned the Plastics to Power plant under the Swachhata Action Plan project of the ministry of education in 2021. The 20-kw capac-

ity plant uses assorted plastic wastes ranging from chocolate wrappers to PVC (Polyvinyl Chloride) including the rejected ones to convert them into power.

The institute is in the process of scaling up the plant to treat 100kg of plastic per day (three tonnes per month).

Minister visits 'Plastics to Power Plant' at NIT Calicut

The Hindu Bureau
KOZHIKODE

Minister for Local Self Government, Rural Development and Excise M.B. Rajesh and Additional Chief Secretary Sarada Muralaiah, Suchitwa Mission Executive Director K.T. Balabhaskaran, Solid Waste Management Director G. Jyothish Chandran and a team of officials from the Department of Local Self Government and Kozhikode Corporation visited the Plastics to Power (P2P) plant at the National Institute of Technology Calicut (NIT-C) to discuss about the feasibility of collaboration in the patented technology of NIT-C for plastic conversions. "We have a waste treatment facility to recycle plastic but the major issue we face is the huge quantity of rejected waste," said Mr. Rajesh during the discussion with Prof. Prasad Krishna, Director, NIT-C.

2. Two inventions from NIT Calicut were presented at InvenTiv 2024, at IIT Hyderabad. Prof. M. K. Ravi Varma, Dr. Sudheer A.P, and two students - Mr. Vivek Pankaj (B200757CS), and Eldho Kuriakose (B200887EC) participated in the exhibition.



3. **Visible Integration Nephelometer** invented by Dr. M K Ravi Varma (Professor, Department of Physics), Dr. Deepa V (VTMNSS College), and Arun R (PhD student) was exhibited at the Expo. The invention was made under the theme of Sustainable Technologies. Technology of Visible band Integrating Nephelometer was developed in Applied Optics and Instrumentation Laboratory, Department of Physics, NIT Calicut. The broad spectral integrating nephelometer is for directly measuring light scattering by atmospheric aerosol. The solar energy, majority of which by visible light, gets scattered by particulate matter (aerosol) in the atmosphere and affects the energy budget into the earth system and will affect

global warming/cooling. The scattering by particles depends on their optical properties, and this instrument will help to characterize different types of aerosols.



4. Dynamic head load redistributing wearable robot was the second invention from NITC displayed at the expo. The invention was made by Dr. Sudheer. A.P., Associate Professor, Department of Mechanical Engineering, under the theme 'Affordable Healthcare'.



5. Taking cues from the National Student Start-up Policy 2019, formulated by the All India Council for Technical Education (AICTE) and National Education Policy 2020, a group of

students from NITC have launched their mission to motivate the student community across the country to launch start-ups. The student members, who are part of Levyug, a recently launched student start-up NITC, are visiting various higher education institutions across the country to motivate them and guide them on start-up initiatives.



7. The Startup Mahakumbh, a monumental gathering of innovation and entrepreneurship held at Bharat Mandapam, Pragati Maidan, New Delhi from March 18-20, 2024, witnessed the spirited participation of student startups from the prestigious National Institute of Technology Calicut (NITC). Organized by the Ministry of Education in collaboration with key governmental bodies and industry stakeholders, the event aimed to foster the burgeoning startup ecosystem in India.

സ്റ്റാർട്ടപ്പ് തുടങ്ങണോ? സഹായത്തിന് എൻ.ഐ.ടി. വിദ്യാർത്ഥികളുണ്ട്

മുക്തം യുവതലമുറയിൽ സംരംഭകത്വം വളർത്താൻ സ്റ്റാർട്ടപ്പ് ആരംഭിച്ച് എൻ.ഐ.ടി. വിദ്യാർത്ഥികൾ. പൃഥ്വിയായി തുടങ്ങുന്ന സ്റ്റാർട്ടപ്പുകൾക്ക് എളുപ്പവില പിന്തുണയും ഉറപ്പുവരുത്തുക എന്ന ലക്ഷ്യത്തോടെയാണ് 'ലെവ് യൂഗ്' എന്ന പേരിൽ വിദ്യാർത്ഥികൾ സ്റ്റാർട്ടപ്പ് ആരംഭിച്ചത്. സ്റ്റാർട്ടപ്പിലൂടെ രാജ്യത്തുടനീളമുള്ള വിദ്യാർത്ഥികളെ സംരംഭകത്വ സാധ്യതകളെക്കുറിച്ചും സർക്കാർ സഹായങ്ങളെക്കുറിച്ചും അറിവ് പകരുന്നതിനൊപ്പം ആവശ്യമായ പിന്തുണയും നൽകും. രാജ്യത്തെ വിവിധ ഉന്നത വിദ്യാഭ്യാസസ്ഥാപനങ്ങളും സന്ദർശിച്ച് വിദ്യാർത്ഥികളെ സംരംഭകരാകാൻ പ്രേരിപ്പിക്കുകയും സഹായങ്ങൾ



○ 'ലെവ് യൂഗ്' സ്റ്റാർട്ടപ്പിന്റെ ഭാഗമായി എൻ.ഐ.ടിയിലെ വിദ്യാർത്ഥികൾ നടത്തുന്ന സ്റ്റാർട്ടപ്പ് റാലി ധ്യാനകർമ്മം. പ്രസാദ് കൃഷ്ണ ഉദ്ഘാടനം ചെയ്യുന്നു

ഉറപ്പാക്കാൻ സ്റ്റാർട്ടപ്പ് റാലിയും നടത്തുന്നുണ്ട്. ഡിജിറ്റൽ പ്ലാറ്റ്ഫോമിലൂടെ യുവസംരംഭകർക്ക് ആവശ്യമായ വിവരങ്ങളും വിവരങ്ങളും നൽകി മികച്ച വ്യവസായ അന്തരീക്ഷം

ഉറപ്പുവരുത്തുകയാണ് ലക്ഷ്യമിടുന്നതെന്ന് 'ലെവ് യൂഗ്' സ്ഥാപകരിലൊരാളായ ജി.വി. കൈലാഷ് നാഥ് പറഞ്ഞു. വിപണി വിശകലനം, സാമ്പത്തികാസൂത്രണം, വിപണനതന്ത്രങ്ങൾ, പ്രവർത്തന

കാര്യക്ഷമത എന്നിവ പങ്കുവെക്കാൻ വിദഗ്ദ്ധ ഉപദേശക സംഘവുമുണ്ടാകും. സ്റ്റാർട്ടപ്പുകളുടെ നിയമവശങ്ങളും 'ലെവ് യൂഗ്' നൽകും.

ഓരം ഇന്ത്യ കൗൺസിൽ

ഫോർ ടെക്നിക്കൽ എജുക്കേഷൻ (എ.ഐ.സി.ടി.ഇ) രൂപവത്കരിച്ച ദേശീയ വിദ്യാർത്ഥി സ്റ്റാർട്ടപ്പ് നയം 2019, ദേശീയ വിദ്യാഭ്യാസ നയം 2020 എന്നിവയിൽ നിന്ന് പ്രചോദനമുൾക്കൊണ്ടാണ് വിദ്യാർത്ഥികൾ 'ലെവ് യൂഗ്' സ്റ്റാർട്ടപ്പ് തയ്യാറാക്കിയത്.

മികച്ച നിക്ഷേപകരെങ്കിലും വിപണിയെയും കണ്ടെത്താനും ബ്രാൻഡ് അവബോധം സൃഷ്ടിക്കാനും സുസ്ഥിര മാർക്കറ്റിങ് തന്ത്രങ്ങൾ വികസിപ്പിക്കാനും സ്റ്റാർട്ടപ്പ് കൂടെയുണ്ടാകും. ജി.ആർ.എസ്. നികിത, ഗൗതം ഗൗഡ്, ദിവ്യ ബൊല്ലിനെനി, വേപ്പൂരി ലക്ഷ്മൺ വിക്രാന്ത് എന്നിവരാണ് 'ലെവ് യൂഗ്' സ്റ്റാർട്ടപ്പിലെ മുഖ്യഗോഷ്ഠി.

8. Innovation Meet and Patent Expo held at NIT Calicut, was a remarkable culmination of the event, drawing academia, industry professionals, and innovators together. The day featured an exciting array of activities, including panel discussions, extra-mural lectures, and competitive pitching events.



9. NIT Calicut has achieved a significant milestone in India's push for technological self-sufficiency by designing and developing a 4kW deck power supply for remotely operated vehicles (ROVs) used in underwater operations. This innovative product was handed over to the National Institute of Ocean Technology (NIOT) on March 14, 2025. The 4kW power supply system, completely developed in India, operates on a standard 230V, 50Hz input and steps up the voltage to a range between 270V to 380V, with precise regulation at 290V. This is crucial for powering ROVs during deep-sea operations at depths of 500 meters.



10. The National Institute of Technology Calicut (NITC) has once again proven its academic and research excellence by securing top positions in the Ministry of Education's National Institutional Ranking Framework (NIRF) 2025.

2nd rank in Architecture & Planning: NITC's Department of Architecture and Planning has achieved the 2nd position nationally, a remarkable improvement from last year's 3rd rank. This reflects the department's strong focus on innovative pedagogy, research, and design excellence.

21st rank in Engineering: In the highly competitive Engineering category, NIT Calicut has secured the 21st position, reaffirming its place among India's top NITs.



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

The National Institute of Technology Calicut is pleased to announce its induction into the HERITAGE Network, a distinguished consortium dedicated to enhancing academic cooperation between India and Europe in the domains of Engineering, Science, Design, and Technology.



- In a significant milestone towards academic excellence, National Institute of Technology Calicut (NIT Calicut) has secured highest accreditation status of 6 years from the National Board of Accreditation (NBA) for three of its prestigious engineering programs—B. Tech in Engineering Physics, M. Tech in Power Electronics, and M. Tech in Instrumentation and Control Systems. Additionally, the Institute has also been granted 3-year accreditation for two of its highly sought-after M. Tech programs—M. Tech in Industrial Engineering & Management and M. Tech in Computer Science and Engineering.
- A team from the National Institute of Technology (NIT) Calicut, comprising both students and faculty members, actively participated in the prestigious Semicon India 2024 event.
- Smart India Hackathon: In 2024-25, internal hackathon was conducted within the Institute so as to refer selected innovative ideas (student teams). A total of 54 ideas were received out of which 40 were under hardware and 6 were under software.
- Under the YUKTI Innovation Challenge, a total of 15 innovations were submitted, of which 12 were recommended for the challenge. Out of these, 10 innovations have been shortlisted for the YUKTI Innovation Challenge 2025.
- Under the IIC-ATL Mentorship initiative, a robotics workshop was conducted in the ATL Laboratory of GSHH Koduvally, with a total of 57 students participating.

L. Detail of Social Media & Connections of IIC institute

Twitter handle: <https://twitter.com/iicnitc>

LinkedIn: <https://www.linkedin.com/in/institution-s-innovation-council-nit-calicut-87734723a/>

Facebook: <https://www.facebook.com/profile.php?id=100080878163843>

Instagram: https://www.instagram.com/iic_nitcalicut/

YouTube: <https://www.youtube.com/channel/UC5fzbwNR6UzqCSJpGTdZKTA/videos>

M. Testimonials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell

- Guru Revathi B, Student Innovation Coordinator, Member: IIC provides the exposure to the industry which is very much needed these days. It also provides students the opportunity to sharpen their soft skills as well as their thought process.
- Guru Adithya, Student Innovator and Entrepreneur: From Entrepreneurship to Innovation, IIC has been backbone of students, it has helped us learn and grow together.

N. Images

The images of all the activities conducted in the year 2024-2025 are enclosed in Quarter wise.

IIC 7.0 Calendar Activities (Quarter-1)

Vision to Venture: A Workshop on Entrepreneurship as Career



My Story... A Motivational Journey of a Successful Entrepreneur



Idea to Impact: A Motivational Session by a Successful Entrepreneur



Unlocking Creativity: A Workshop on Problem Solving and Ideation



Basics of Intellectual Property Rights



A Field Visit to “Technology Business Incubator (TBI), NIT Calicut”.



Code Hackathon



Idea Showcase: A Two Days Technical Exhibition



IIC Celebration Activities (Quarter 1)

Celebrating National Entrepreneurship Day



Innovation Day: Remembering Dr. APJ Abdul Kalam



National Education Day: “Educate, Innovate, Elevate – A Founders' Story”



IIC MIC Driven Activities (Quarter 1)

Session on MIC Programmes & Schemes with Dr. Abhay Jere



IIC Calendar Activities (Quarter 2)

A Two-Day Workshop "Innovate, Ideate, and Create: A Design Thinking Workshop for Students"



A Hands-On Workshop "Modern Biotechnology Techniques".



A Session on "A Pathway to Innovation: A TRL-Based Approach".



The Expert Talk "Effective Sales and Marketing Strategies".



The Expert Talk "Step-by-Step Guide: Validating Problem-Solution Fit Before Scaling".



Industrial Visit to Milma Dairy Plant.



The Painting Competition "Be the Solution to the Pollution".



The Innovation Competition "Maverick Innovation Challenge".



IIC Celebration Activities (Quarter 2)

National Energy Conservation Day



National Pollution Control Day – Group Quiz Competition



National Science Day celebrations - Robotic Lab Visit



National Youth Day Celebration



National Startup Day Event "Endivour: A Journey of a Common Entrepreneur"



IIC Self Driven Activities (Quarter 2)

Finance Management for Startups by Dr. Ratna Kumar



An expert talk on "Planning Your Portfolio: A Session on Innovative Approach". by Dr. Sanil Kumar



IIC Calendar Activities (Quarter-3)

From Concept to Creation – A Workshop on Prototype and Process Design



Industrial Visit to Fortune Elastomers, Calicut



How to Start a Startup? – Legal and Ethical Steps



A Workshop on Startup Funding & Financial Planning



Intellectual Property & Technology Transfer Workshop



Pitch Perfect: Startup Idea Challenge

Day-1



Day-2



A two-day B-plan Pitching on Startup Spark: Best Business Idea Contest



IIC Celebration Activities (Quarter 3) National Technology Day - Drone Assembly Workshop



An International Women's Day Celebration: Coir Handicrafts Exhibition and Sale



Report on the Celebration of World Creativity and Innovation Day & Inauguration of IP Utstav

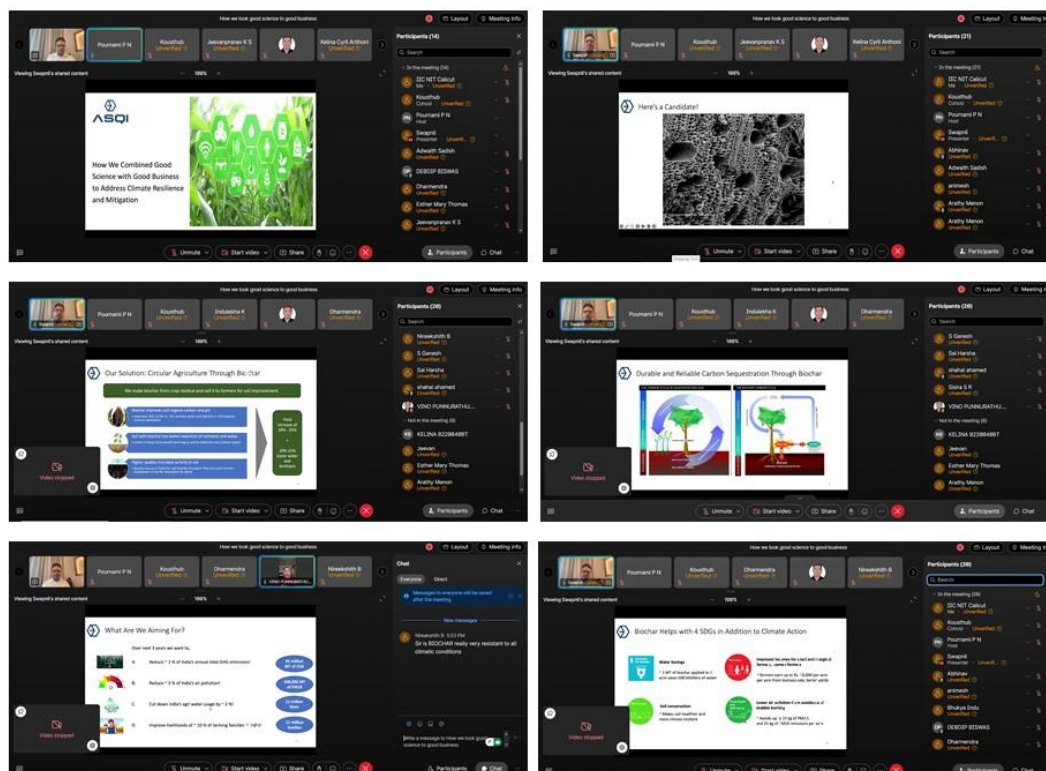


World IPR Day Program: “Innovations and IPR in Academic Research”



IIC Self driven Activities (Quarter 3)

An online session on “How We Took Good Science to Good Business” by Dr. Pournami



Report on Two-Day Drone Workshop by Dr. Sudheer AP

Day-1



Day-2



A short time training program on “Libre & LaTeX”



IIC MIC Driven Activities (Quarter 3)

Masterclass on Patents and Design Registration



Copyrights Uncovered: Masterclass on Copyrights



Masterclass on Trademarks and Geographical Indications



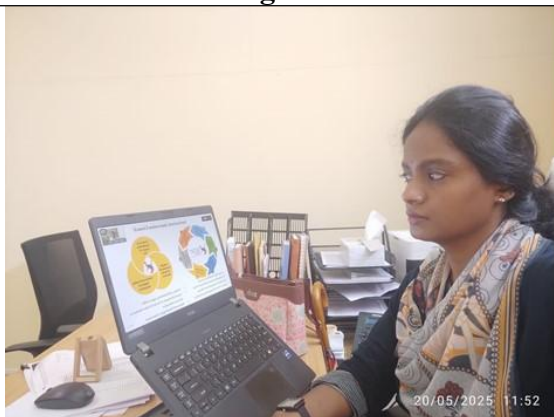
Significance of IP Protection and Commercialization



Patent to Product (Srujanta Se Samruddhi)”



Building YUKTI Innovation Repositories in IIC Institutions



IIC Calendar Activities (Quarter-4)

Bridging the Gap: From Innovation Validation to Start-Up Formation



From Ideas to Impact: Incubation Opportunities for Students and Faculty



One Day Workshop on Funding Opportunity for Early-Stage Entrepreneurs



A Panel Discussion – “Business from Academia”



Idea to Impact Workshop at GHSS Koduvally with the help of ATLs



Startup Pitch Competition

Day-1



Day-2



Demo Day 2025

Day-1



Demo Day 2025

Day-2



IIC Celebration Activities (Quarter 4)

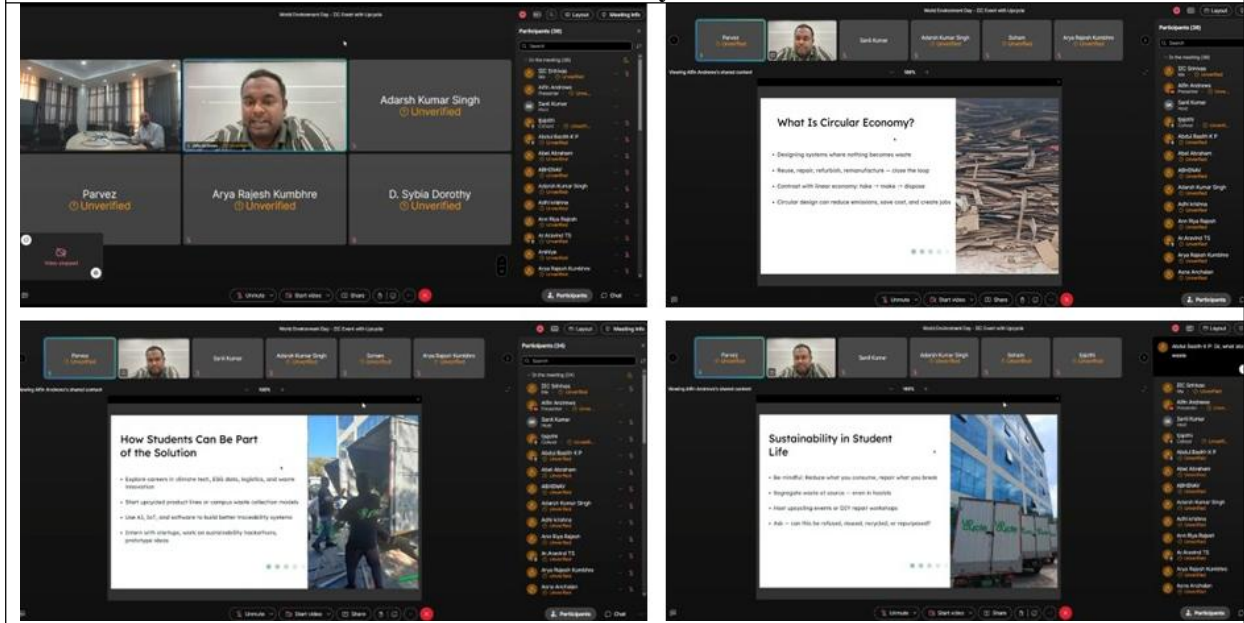
Independence Day Celebration 2025



World Entrepreneurship Day Celebration 2025



World Environment Day Celebration 2025

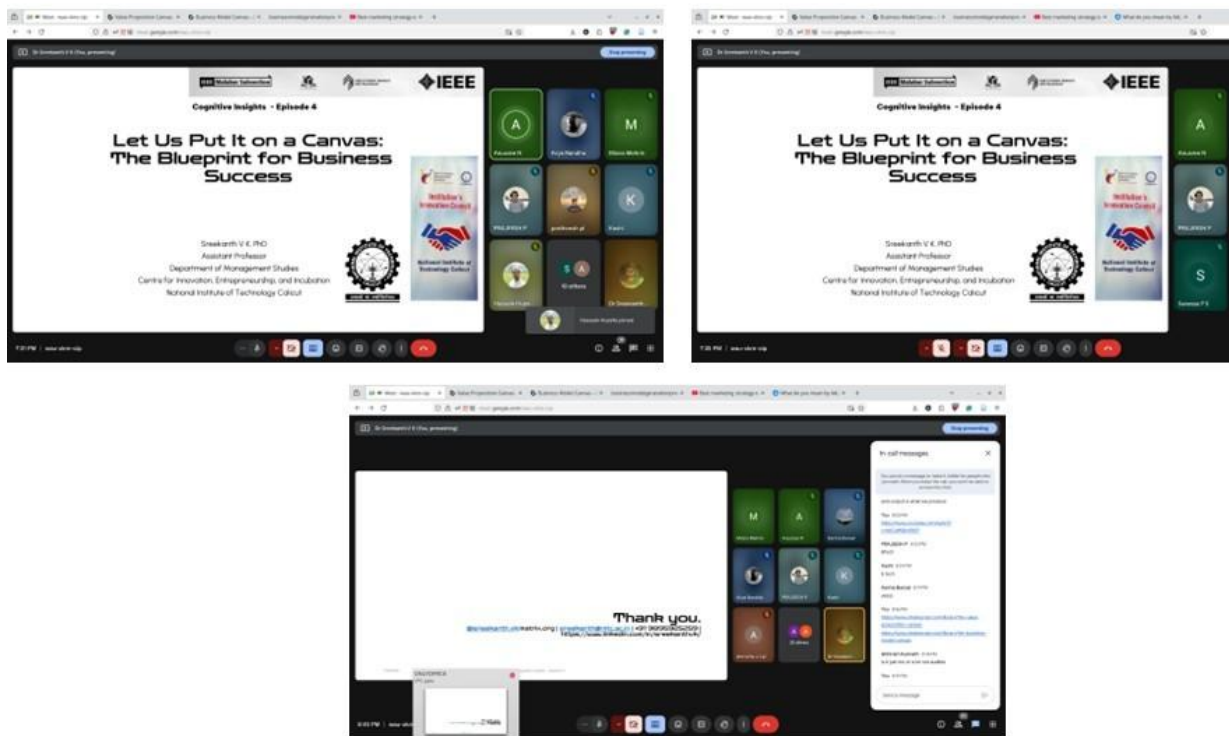


IIC Self Driven Activities (Quarter 4)

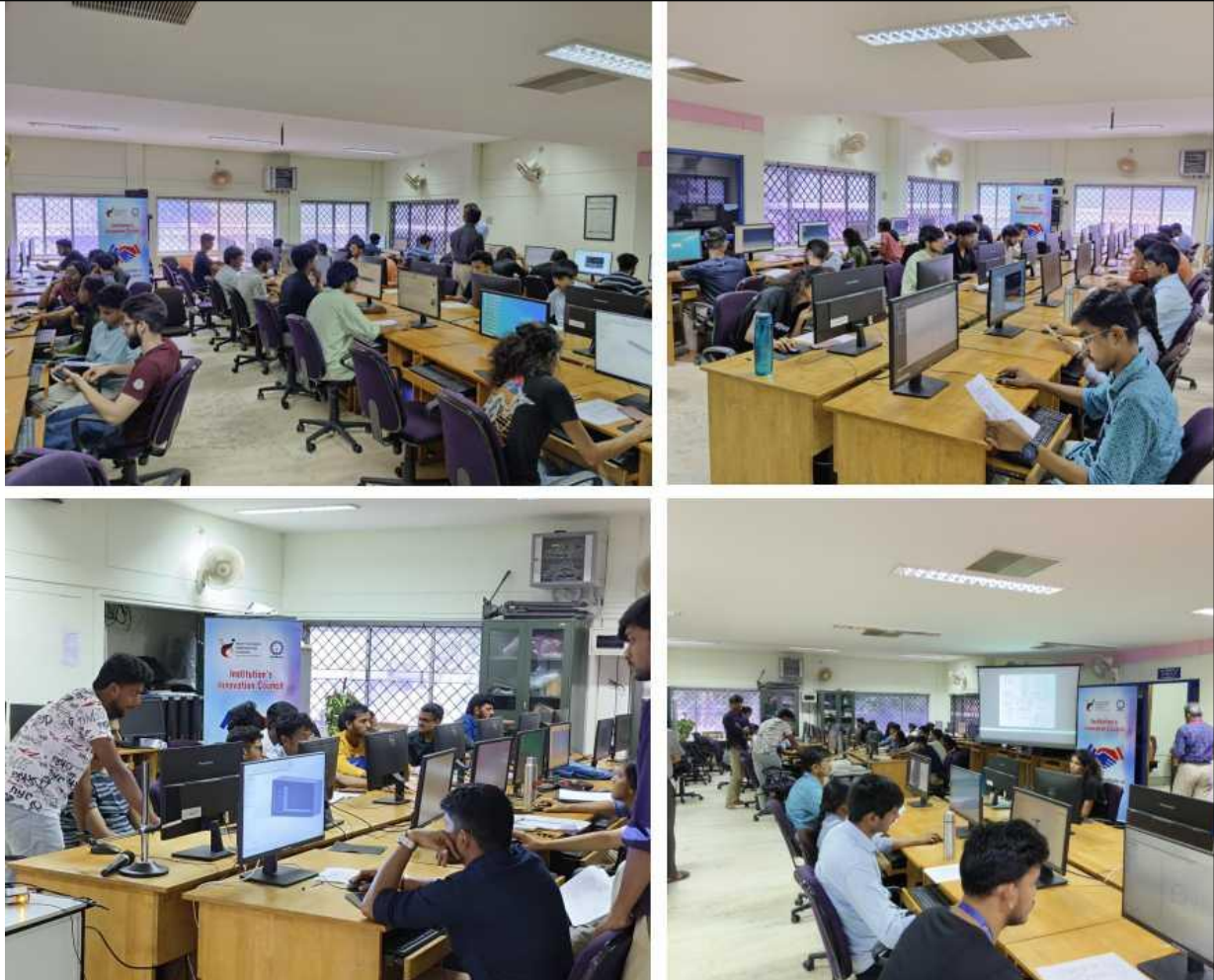
Drone Workshop - New Innovations in the UAVs by Dr. Rakesh R. Warier



Let us put it on a Canvas – The Blueprint for Business Success by Dr. Sreekanth V K



Solid Works Training for students by Dr. Sudheer AP



O. Contact

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