



IIT Palakkad
Technology IHub Foundation
Driving automation for energy and safety



Kaleidoscope

Volume 4, Issue 1

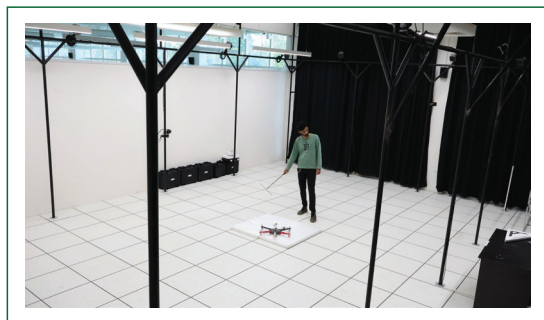
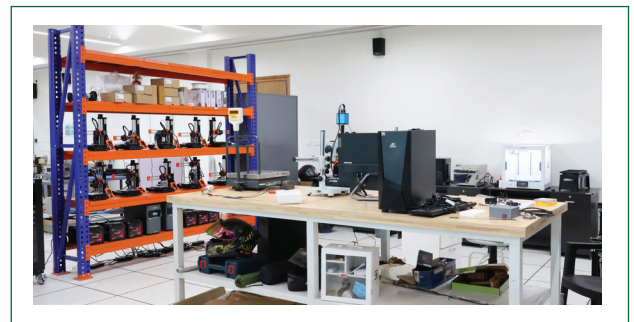
IPTIF is entering its fifth successful year of operation with a continued focus on supporting innovative technologies and products having a larger societal impact. We've expanded our portfolio to include more technologies, startups, facilities and programs. Additionally, we've made significant strides in skill development and forged very valuable collaborations.

We are optimistic that with the support of our stakeholders, IPTIF will play a pivotal role in fostering a vibrant deep-tech innovation ecosystem in the region.

In this issue of Kaleidoscope, we highlight some of our key achievements since the last issue.



IPTIF has moved into its permanent office space at Dr. A P J Abdul Kalam Block, Sahyadri Campus, IIT Palakkad



This office includes a dedicated 20-seater Skill development center and a world-class Qualisys Motion Capture Facility in addition to 60-seater co-working space, 3-D printing Facility, Fab Lab, Electronic Assembly & testing facility.

Technology Out Licensing



IPTIF supported technology “Fixed-thruster Underwater Vehicle” under NM-ICPS developed by Prof. Santhakumar Mohan, IIT Palakkad has been technology transferred to M/s. Oceanautics Private Limited, Andhra Pradesh on 1st July 2024.

Product Launches



IPTIF-supported technology from the startup Elaicle Pvt Ltd (Founder Mr. Shakeel Akthar) “Trike-innovative patrolling electric vehicle”, has been market launched by Coimbatore City Police Commissioner Shri. Balakrishnan V. I.P.S

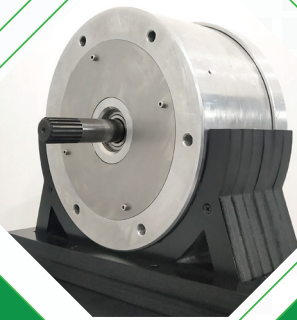


IPTIF supported startup All About Innovations Pvt Ltd (Founder Mr. Linshad Latheef) has reached a significant milestone with the launch of their technology product “Radian Electric Outboard Motor.” on Shikaras in Alleppey, Kerala.

Patents Filed

SWITCHED RELUCTANCE MOTOR (SRM) ARRANGEMENT WITH SINUSOIDAL INDUCTANCE PROFILE

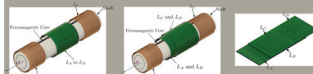
Applicant : IIT Palakkad
202441070655



Dr. Vijay Muralidharan
IIT Palakkad
ADr. Anirudh Guha
IIT Palakkad
Mr. Rahul M S, Mr. Agney Marath
Mr. Bijin Balakrishnan,
Mr. Aravind K Jayan
IIT Palakkad

VARIABLE RELUCTANCE BASED INDUCTIVE SENSOR FOR SIMULTANEOUS ANGULAR AND LINEAR DISPLACEMENT MEASUREMENT AND METHOD THEREOF.

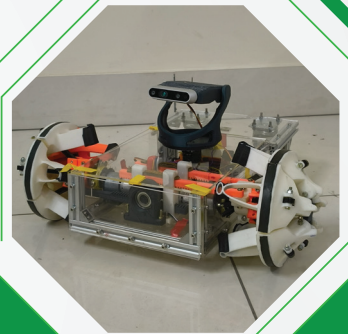
Applicant : IIT Palakkad
202441037526



Dr.Sreenath Vijayakumar,
VSS Srikar Emany,
Dr. Satyajit Das and
Dr. A.S. Anil Kumar
IIT Palakkad

A MULTIMODAL ROBOT AND METHOD THEREOF

Applicant : IIT Palakkad
202441050690



Prof. Santhakumar Mohan,
IIT Palakkad
Mr. Shivansh Chaudhary
IIT Madras

A DUAL-MODE UNMANNED VEHICLE RECONFIGURATION SYSTEM

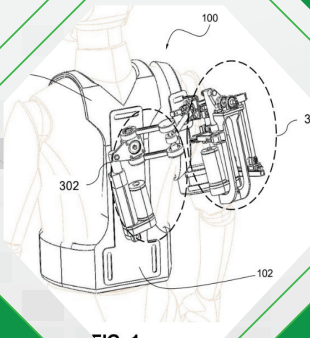
Applicant : IIT Palakkad
202441057185



Prof. Santhakumar Mohan
IIT Palakkad
Mr. Amar Hamdan Thayyi
IIT Palakkad
Mr. Labeeb Nassar
IIT Palakkad

WEARABLE SHOULDER EXOSKELETON

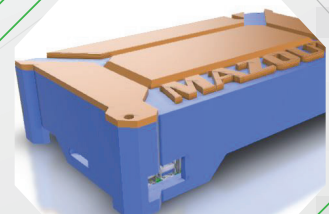
Applicant : IIT Madras
202441041439



Prof. Santhakumar Mohan,
IIT Palakkad
Mr. Avinash S Pramod,
IIT Madras
Prof. Asokan Thondiyath,
IIT Madras

AUTO- CALIBRATION FOR ELECTRIC VEHICLE TRACTION INVERTER

Applicant : Mazout Electric Pvt. Ltd
202411049782



Mr. Akhil Gupta
Mazout Electric Pvt. Ltd

Publications

- **Accelerating Multi-Head Self-Attention Architecture for Transformer Models on FPGA In 37th IEEE Int'l Conference on VLSI Design (VLSID) 2024, Kolkata** - Remya R, Kala S. -International Conference on Electronics, Computing and Communication Technologies (CONECCT), Bangalore, July 2024(Conference)
- **A modified human shoulder model considering the migration of the humeral head from the scapular glenoid fossa for the design of shoulder exoskeletons** - Avinash S Pramod, Santhakumar Mohan, and Asokan T
- **Feature Compensation Network for Prototype-based Cross-Modal Person Re-Identification** Nirmala Murali, Deepak Mishra, IEEE Access Volume: 12 (2024)
- **Control of a building system with sudden nonlinearity using the sliding mode technique**, Chakraborty S, Sensy K, Ji, X Journal of Vibration and Control (2024)
- **Effect of a frequency adaptive control system on the modal control spillover of structures**, Abhishek S, Chakraborty S, Structures (2024)
- **Nonlinear Attitude and Altitude Trajectory Tracking Control of a Bicopter UAV in Geometric Framework**, Vijay Reddy Vundela, and Vijay Muralidharan ,Journal of Robotics (2024)
- **Modeling and Control of a Novel Bi-Quadcopter with Auxiliary Thruster Mechanism**, Vijay Reddy Vundela, and Vijay Muralidharan 9th IEEE International Conference on Automatic Control and Intelligent Systems (I2CACIS 2024), 2024. - (Conference)
- **Modeling and Control of QBQ-Copter: A Novel Morphing Drone**, Vijay Reddy Vundela, and Vijay Muralidharan IEEE Region 10 Symposium (TENSYPMP 2024), 2024 - (Conference)

New Call for Proposals Launched



IPTIF UYARE

Unified Youth Advancement for Research & Entrepreneurship



IPTIF has launched the 'UYARE' initiative, aimed at fostering technological innovations and entrepreneurship within the tribal community. Supported by the NM-ICPS, Department of Science and Technology, Government of India, the program invites project proposals from faculties, innovators, and entrepreneurs from tribal category in sectors such as energy, agriculture, safety, and healthcare.

Selected proposals will receive grand in aid support of up to INR 10 lakhs.



LAST DATE TO APPLY
20th OCTOBER 2024

Scan the QR to APPLY

<https://iptif.accubate.app/ext/form/2697/1/apply>

Entrepreneurship

Entrepreneurship in Residence 3.0

Vishnu T U

Startup: Touch Motion Robotics Pvt Ltd, Tamil Nadu



Nandhu Kiran

Startup: Fourth Dynamics, Kerala.



Linshad Latheef

Startup: Allabout Innovation and Advanced Research, Kerala.



Navaneeth M

Startup: Bumblebee Instruments, Kerala.



Sankar S

Startup: eDrift Electric, Tamil Nadu.



Shakeel Akthar S

Startup: Elaicle Technologies Tamil Nadu.



Sai Kiran

Startup: Zeromatter Tech, Telangana.



Aritra Ghosh

Startup: Vidyutva Technology Odisha.



Sheltan T T

Startup: CYBERimp, Karnataka.



Himanshu Gupta

Startup: Renergizr Industries, Uttar Pradesh.



Pitch Competition

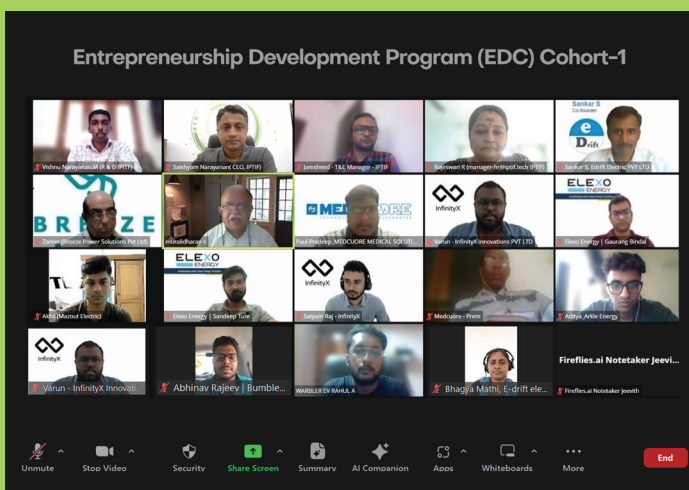
Ideathon pitch competition "Aarambh 2.0" as part of the TITAN Design Impact Movement; supported by IKP EDEN on 18th April, 2024. Three winners from ten finalists awarded.



Mr. Sriram Sankaran, Chairman and MD of Synchron Group, Startup Mentor and Angel Investor, delivered an expert talk on "Technology and Innovation in Startups" at the grand finale of Ideathon - IPTIF AARAMBH 2.0 on 18th April, 2024.

Entrepreneurship Development Program Launched

IPTIF launched a 6-month Entrepreneurship Development Program (EDC) as part of the IPTIF IMPACT Program, supporting 10 innovative startups in their journey. Mr. Muralidharan Sridharan, Chairman, Mobility Aftermarket / Eminent Startup Mentor & Coach, IIT Startups leads the EDC.





Faculty Entrepreneurship Workshop

IPTIF-Conducted a Workshop on Faculty Entrepreneurship in Collaboration with IIT Palakkad and Kerala Startup Mission held at IIT Palakkad on 27th May 2024 with over 120 participants.

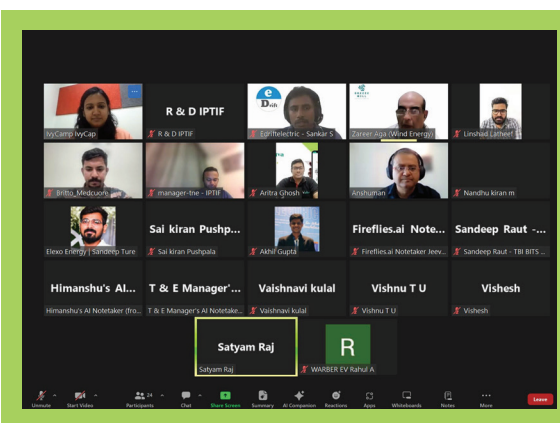
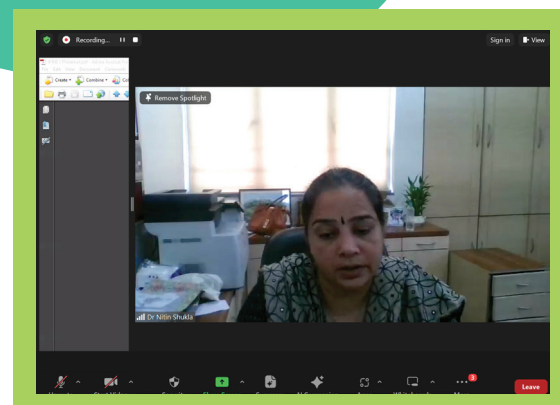


Startup Mentoring Sessions

IPTIF hosted a week-long (16th -19th July) IvyCamp connect series supported by IvyCap Ventures for IPTIF Startups and Entrepreneurs with sessions on MVP refinement, Product-Market Fit, GTM Strategy and Initial traction with eminent speakers including Mr. Suman Saurabh, DocuStack; Mr. Anshuman Verma, Shift Alt Capital and Mr. Ajay Rungta, Practo.

IPTIF also conducted two IP sessions

1. "Pragmatic Elements of Patenting and Tech transfer" on 26th June by Dr. Nitin Tewari, NCL Pune.
2. IVY Connect series on "Importance of IP" by Mr. Arjun bala on 22nd August.



IPTIF conducted a special session on "Legal and Regulatory Essentials for Fundraising in Startups" by Ms. Khyati Jha, Managing Partner at Spectrum Partners on 27th July.



Startup Showcases



IPTIF-supported technologies from Startups Elexo and Medcuore Showcased at TIPS 4.0 on 13th July 2024



IPTIF-supported technologies from Startups Arkel, Bumblebee, and Elexo showcased at India Energy Conference from 1st - 5th July 2024.



IPTIF-supported 10 startups showcased their products at the Industry Accademia Conclave 6.0 on 21st september 2024.

Startup Achivements

IPTIF supported startup Fuselage Innovations Pvt Ltd has been officially registered as a manufacturer with the DRDO, for aerospace and defense equipment, autonomous systems, UAVs, robotics, and AI systems.



Dr. Registered / Speed Post

NPOL
Certified ISO 9001:2015
Phone : 0484 - 2571000
Fax : 0484 - 2424558
E-mail : tso@npol.drdo.in

DRDO
भारत सरकार - रक्षा मंत्रालय
रक्षा अनुसंधान तथा विकास संगठन
नौसेना भौतिक तथा समुद्रविज्ञान प्रयोगशाला
रुकमाकराडा, कोची - 682 021, भारत
Government of India, Ministry of Defence
Defence Research & Development Organisation
NAVAL PHYSICAL & OCEANOGRAPHIC LABORATORY
Thrikkakara P.O., Kochi - 682 021, India

Ref No. [REDACTED]

To
M/s Fuselage Innovations
Maker Village,
Kerala Technology Innovation Zone
Kalamassery
Kochi - 683503

Sub: **REGISTRATION OF FIRM**
Ref: Your application/ letter request for registration of firm.

Dear Sir,

1. We are pleased to inform that **M/s Fuselage Innovations** has been registered with this Lab/ Estt as per following details:

(a) Unique Registration No.	DRDO/ [REDACTED]
(b) Date of Registration	14/06/2019
(c) Date of validity of Registration	14/06/2021
(d) Registered as	MANUFACTURER/ DISTRIBUTOR
(e) Stores/ Items/ Services for which registration is granted	[REDACTED] UNMANNED AERIAL VEHICLE
(f) Monetary ceiling for existing individual orders/contracts	Nil

2. The Director of this Lab/ Estt reserves the right to cancel your registration at any time without notice on any of the following grounds:

- Failure to observe, while tendering, the instructions given in tender form.
- Failing to quote in response to invitation to tender on three successive occasions.
- Failure to execute the contract/ Supply Orders satisfactorily.
- Rendering of false information in the application for registration/ quotation.
- Any other grounds which in the opinion of the Director render retention undesirable in public interest.

3. By registering your firm on our list, we are not under any obligation to issue our tender enquiries to you each and every time. Enquiries will be issued depending upon the nature of procurement solely at the discretion of the Director, NPOL.

4. This registration will be valid upto [REDACTED] (date mentioned at 1(b)) and renewed thereafter at the discretion of the Director considering your firm's performance during the preceding period of THREE years.

5. Please inform any change provided in the application form submitted for registration to the Director, NPOL, Kochi - 682021.

6. Please acknowledge receipt.

Yours sincerely

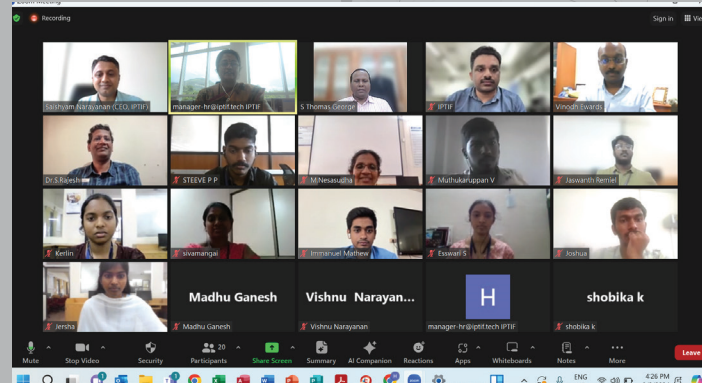


IPTIF supported startup Mazout Electric Private Limited selected as the top 12 finalist in the NXP India Tech startup challenge- season 4, conducted by startup India .

Human Resource Development

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IPTIF conducted a two-month summer internship program at three institutions: NSS Engineering College, Palakkad from 1st May to 20th June 2024. ; PSG College of Technology, Coimbatore from 15th May to 15th July 2024; and Karunya Institute of Science and Technology, Coimbatore (date) . 10 interns from each institution are supported with a monthly fellowship of INR 5000 from IPTIF.



IPTIF awarded 02 AGNI PG fellowships and 06 AGNI UG Fellowship during this period.

Additionally supported 14 project interns for startups



02

**IPTIF-AGNI
UG & PG
FELLOWSHIPS**



06



Dr. Rajeswari R, HR at IPTIF, participated in the orientation ceremony at Nehru School of Management and led an expert talk on the topic "Transforming Self to be a Professional" from 12th to 19th August 2024.

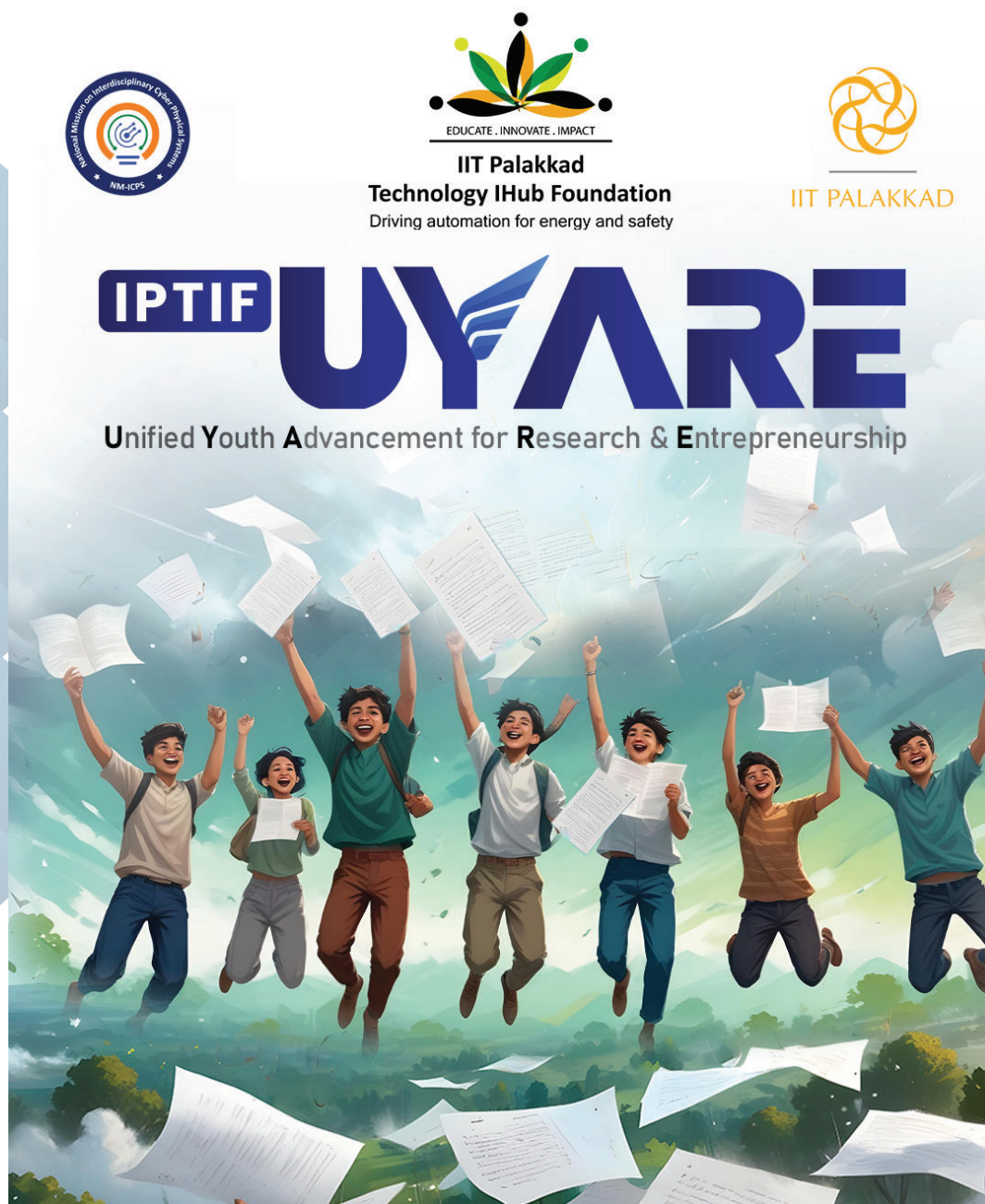


Dr. Rajeswari R, HR at IPTIF, delivered a session on the topic "Preventing and Addressing Corporate Harassment" in the Student Development Programme at Yuvakshetra Institute of Management Studies on 24th September 2024.

Dr. Saishyam Narayanan, CEO ,IPTIF, conducted a session on Innovation and Entrepreneurship Development for Startups and Innovators at Karunya University on 16th September 2024 .



Training Program for Students Launched



The UYARE program offers a six-month residential training for tribal students, combining hands-on technical training and internships, with a monthly stipend of up to INR 10,000.



LAST DATE TO APPLY
25th OCTOBER 2024

Scan the QR to APPLY

<https://iptif.accubate.app/ext/form/2707/1/apply>

Skill Development



IPTIF certified short-term skill development program on "Introduction to Raspberry Pi: Foundations for Coding" conducted from April 15 to 19th, 2024 with 5 participants from Sreepathy Institute of Management and Technology, Vavanoor.

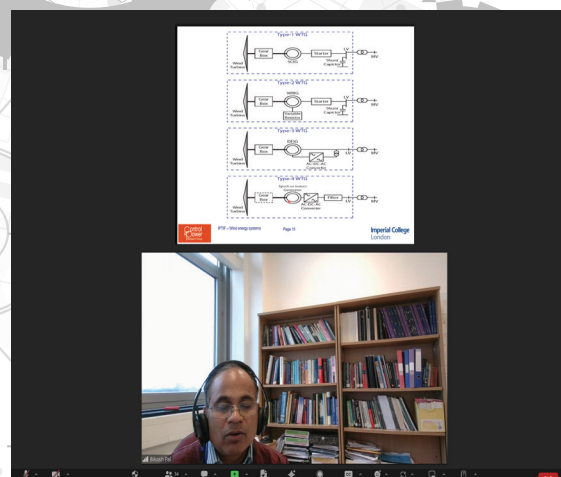


IPTIF in association with IIT Palakkad organized The Fourth Season of Science Quest supported by Tata Motors Automotive Seating Systems, from 22nd to 31st of May 2024 with 30 students.



IPTIF hosted a 5-day workshop on "Advanced 3D Printing and Machine Assembly" from June 24 to 28, 2024. Six students from NSS Engineering College, Palakkad, participated.

IPTIF conducted an advanced-level online course on "Dynamics Stability Solutions in Wind Energy Systems" led by Professor Bikas Pal from Imperial College London from May 28 to June 1, 2024 with 29 participants, including students, researchers, and industry professionals.



IPTIF organized a three-day workshop on "Intelligent Systems Workshop: Advanced Embedded AI for Real-World Problems" at the College of Engineering, Thalassery, from July 2 to 4, 2024 by Dr. Lomin Joy, a Senior Project Engineer at IIT Palakkad. 45 students participated.



IPTIF in association with IIT Palakkad organized a 4 days AICTE sponsored FDP on additive Manufacturing from 10th July to 13th July 2024



IPTIF certified two-day workshop on "Industrial Power Converters Design" conducted on 22nd and 23rd of July 2024, led by Dr. Sankar S, founder of eDrift Electric Private Limited (an IPTIF-funded startup) and his team with Six participants.

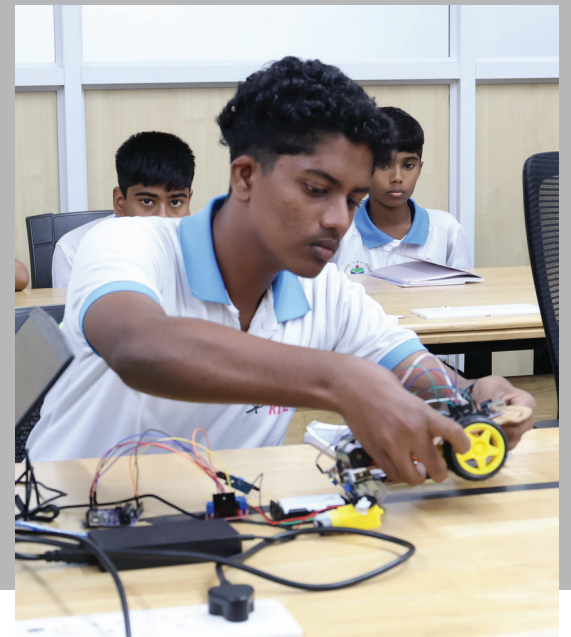


IPTIF certified one-day 3D Printing and Design Workshop on September 11th, 2024 with 20 students from NSS Engineering College, Palakkad.

IPTIF conducted a one-day hands-on training workshop led by Qualisys team at IPTIF Motion Capture Facility on 23rd September 2024, with 15 participants.



IPTIF certified hands-on workshop on “IoT & Robotics” for 60 students from Govt. Boys School, Chittur, as part of the KITE (Kerala Infrastructure and Technology for Education) program on September 25, 2024, Led by project engineers from IPTIF and IIT Palakkad.



IPTIF along with Research Affairs Council, IIT Palakkad conducted an “IP Clinic” Intellectual Property Rights on the 26th & 27th of September 2024 with Mr Shivakumar R, Founder & Managing Attorney of Shiv & Attorneys as the resource person.



VISITORS



Prof Gurunath Gurrula from IISc visited IPTIF on April 19, 2024.



Dr. Sreedhara Voleti, Managing director of Indras Pvt Ltd and Mr. Kiran Kumar Alla, Senior Director of Plug Power, visited IPTIF on April 22, 2024 .



Shri C Balagopal, Industrialist and former Civil Servant from Kerala and Dr. Viju Parameshwar, Former President and CEO Kluber Lubrication India Pvt Ltd. visited IPTIF on June 13, 2024.



Prof Ashok Kumar Mishra Former Director of IIT Mumbai Visited IPTIF and interacte with our startups and engineers on 12th June 2024.



Ms. Rupali Choudhary, Program Manager at IVyCamp, visited IPTIF on July 10th, 2024, to connect with startups.



Major General M Rajendran, CEO of IIT Tirupati Navavishkar I-Hub Foundation, visited IPTIF on 29th August .



Prof. Folke Haugland, Head of Department, Information and Communication Technology (ICT), University of Agder, Norway visited IPTIF office on 23rd July.

Events



IIT PALAKKAD TECH CONNECT Bridging Industry Research and Innovation @ Coimbatore

IIT Palakkad TechConnect at Coimbatore brought together over 100 delegates from 70+ industries, fostering collaboration between academia and industry to enhance technological innovation and indigenization in India. Prof. A Seshadri Sekhar, Director of IIT Palakkad, highlighted the “Design & Manufacture in India” vision, while the chief guest, Air Commodore Vishnu Gaur emphasized on defense sector partnerships.

Notable speakers included Shri N P Naik from Cordite Factory, Ms. Hemalatha Annamalai from Ampere EV, and Mr. Mithun Ramdas from SIEMA. A key moment was the signing of an MoU with the Foundries Development Foundation, advancing industry-academia collaboration for future innovation.



IPTIF participated in TIPS 4.0 at IIT Mumbai on May 13th to 14th, 2024. IPTIF funded startups Elexo Energy Pvt. Ltd. and Medcuore Pvt. Ltd. actively projected their work.



IPTIF participated in the 6th edition of the Industry-Academia Conclave (IAC 6.0), highlighting ten promising startups and projects supported by the foundation. The event provided an excellent platform for showcasing innovative solutions and connecting with industry leaders.



The IPTIF team participated in Bioconnect 2.0 on September 27th and 28th, 2024, showcasing health-tech innovations from various startups and innovators. IPTIF CEO, Dr. Saishyam Narayanan, shared insights on idea to industrialization as a panelist.



IPTIF participated in the 10th Edition of India Energy Storage Week (IESW) 2024 in New Delhi as a supporting partner for Startup Day and Expo on 1st-5th July 2024. IPTIF CEO, Dr. Saishyam Narayanan, co-chaired the Founders Roundtable.



IPTIF certified workshop on "Smart Grids and Renewable Energy Systems" on October 9th, 2024, at IIT Palakkad, with 40 participants from notable academic institutions, industry, startup, and government. The workshop featured key speakers, including Prof. N. P. Padhy, Director MNIT Jaipur & IPTIF Chair Professor; Mr. Varad Rajan Krishna, Executive Director of WinAMR Systems Pvt Ltd; Prof. T. Sundararajan, Visiting Professor at IIT Palakkad; and Dr. Manas Kumar Jena, Assistant Professor at IIT Palakkad.

Collaborations



IPTIF and Maruti Suzuki India Limited signed an MoU to support technology innovations and startups.



IPTIF and IvyCap ventures Advisors signed an MoU to support startups and entrepreneurship.



Jet Aerospace
Drone Manufacturing Hub

IPTIF and Jet Aerospace Drone Manufacturing Hub Private Limited signed an MoU to establish an RPTO and collaborate in skill development programs

IPTIF MOMENTS



IPTIF team marked World Environment Day by introducing new plants to the office, bringing a touch of nature indoors.



IPTIF team celebrated Onam 2024 with lots of fun activities.



**IIT Palakkad
Technology IHub Foundation**
Driving automation for energy and safety



office@iptif.tech



www.iptif.tech



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