>>> EEE NEWSLETTER <<<

ENLYTUS

JULY'25 EDITION

>>> DEPARTMENT ACTIVITIES

>>> FACULTY ACHIEVEMENTS

>>> STUDENT ACHIEVEMENTS

>>> TECH BEATS

VISION OF DEPARTMENT

To be an exemplary department in Electrical Engineering to facilitate value imbibed quality professionals.

MISSION OF DEPARTMENT

I.Impart state of the art knowledge in Electrical and Electronics Engineering Field.

2. Inculcate the culture of research and lifelong learning.

3.Facilitate the professionals with commitment towards Social & Ethical Values.

PROGRAMME EDUCATIONAL OBJECTIVES

I. Graduates will handle the modern tools and take diverse career paths / research / higher education.

2. Graduates will excel with managerial and leadership qualities.

3. Graduates will have skills to work in teams with integrity & ethical values.

PROGRAMME SPECIFIC OUTCOMES:

I. Gradate will be able to apply fundamental knowledge of Electrical and Electronics Engineering to identify, analyse, and solve complex problems related to Power Systems, Electrical Machines, Control Systems, Power Electronics and Electrical System Design.

2. Graduates will be able to apply core Electrical and Electronics Engineering knowledge with advanced Computational Intelligence skills to develop innovative and sustainable solutions for societal, environmental and industrial needs.

DEPARTMENT ACTIVITIES

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The Department of Electrical and Electronics Engineering marked the official inauguration of the SEEM- Industry Outreach Center (IOC) on July 30, 2025, at the college seminar hall. The ceremony began at 10:00 AM in the esteemed presence of Mr.Mohandas T V (Chief Guest), Dr.M S Murali (Principal), Dr.Deepa Sankar (HOD), Dr.Sreena Sreekumar (Faculty-in-Charge) and Ms.Gomathy S (SEEM Mentor). Mr.Mohandas T V delivered an insightful session on Energy Auditing, offering students valuable knowledge on energy conservation and sustainable practices.

DEPARTMENT ACTIVITIES

Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

SEEM-IOC STRUCTURE

Ms. Gomathy S
(Seem Mentor)

Dr. Sreena Sreekumar
(Faculty In Charge)

Ashish S Cherian
(Chair Person)

Sooraj S
(Vice Chair Person)

Jeon Jiju
(Secretary)

Harijith Asokan
(Treasurer)

Aijo Biju
(Media Publicity
Co-Ordinator)

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(Content Lead)

Navin Vinod
(Editorial Lead)

Athul Krishna NS
(Editorial Co-Lead)

Ambady Sivan
(Event Co-Ordinator)

Rinu Reji
(Event Co-Ordinator)

Greeshma MS
(Membership Development)

Anandhakrishnan S
Prabhu
(First Year Co-Ordinator)

DEPARTMENT ACTIVITIES

An MoU was signed between the college and the Society of Energy Engineers and Managers - Industry Outreach Centre (SEEM-IOC). The agreement focuses on providing students with industry exposure, internships, career and research guidance, entrepreneurship support, and technical training. It also includes annual student programs, placement assistance, and support for setting up energy labs and e-learning platforms.

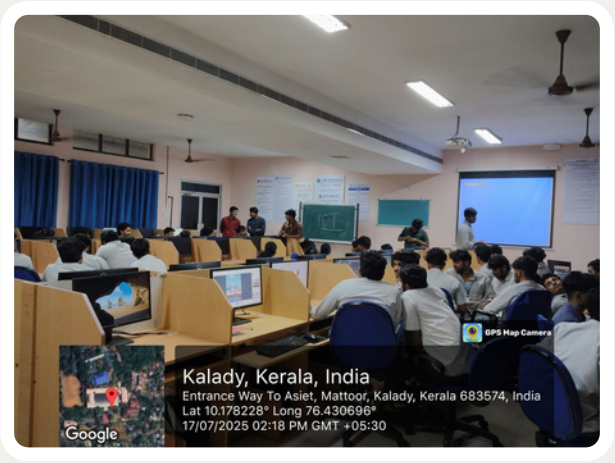
DEPARTMENT ACTIVITIES

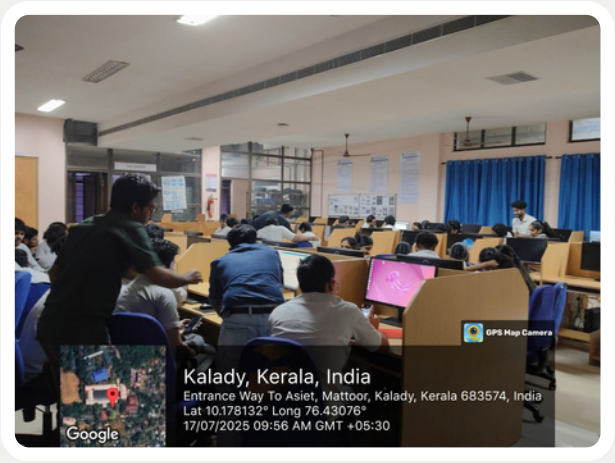
VALUE ADDED COURSE

Add-on course on, “IoT Prototyping & PCB Design” was conducted for S3 EEE students from July 1 to 4, 2025, at EC Stimulation Lab by the Center for AI-IoT Innovation, Adi Shankara Institute of Engineering and Technology, Kalady. Sponsored by MeitY, Govt. of India, the course offered hands-on training and valuable insights into IoT systems and PCB development. The program provided students with practical exposure to emerging technologies and enhanced their technical skill set.

DEPARTMENT ACTIVITIES

VALUE ADDED COURSE

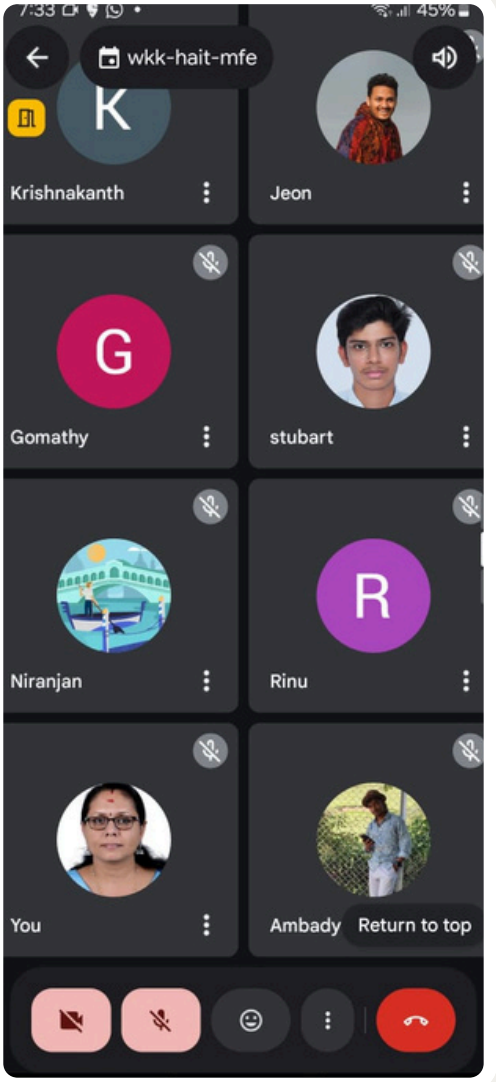


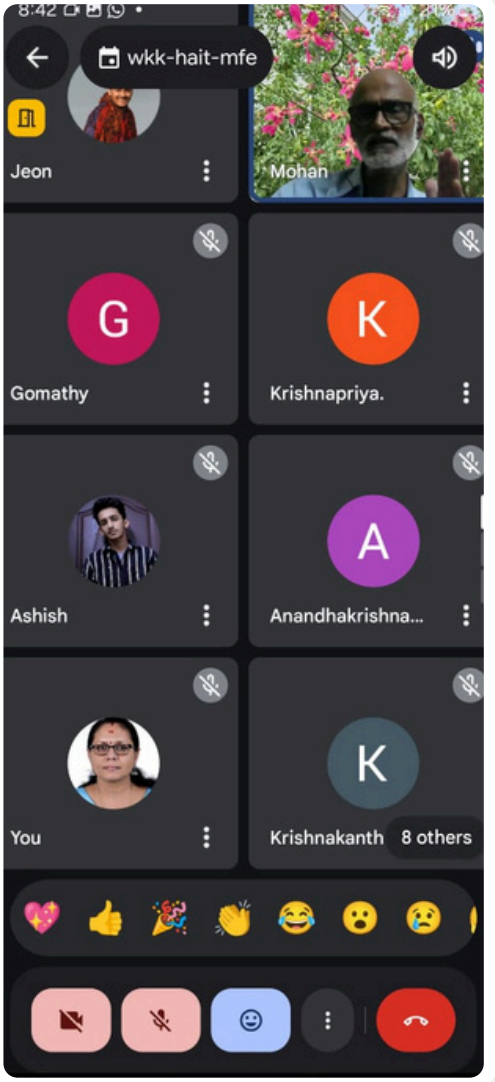


Value-added course on, “Embedded Systems and Digital Design” for the S5 EEE students was held from 16 to 21 July 2025 at the Programming & Simulation Lab. Topics covered included ESP32, ESP8266, Raspberry Pi, FPGA, and Python Programming. The sessions was conducted by the Center for AI-IoT, ASIET, under MeitY, Government of India, to enhance students’ technical knowledge and practical skills.

DEPARTMENT ACTIVITIES

ONLINE WEBINAR





SEEM (Society of Energy Engineers and Managers) organized an online webinar on, "Basics of Energy Audit" on 22 July 2025, through Google Meet. The session was handled by Mr.Mohandas T V, Certified Energy Auditor and Senior Consultant at Atul Energy Consultants Pvt Ltd, Thrissur. With his rich experience and expertise, participants were provided with fundamental insights into the principles and practices of energy auditing. The session proved to be highly informative and engaging, offering a valuable learning experience for students and faculty alike.

DEPARTMENT ACTIVITIES

ALUMNI INTERACTION

An alumni interaction session was held on 28 July, 2025 for S7 and S5 EEE students, featuring Mr.Ajith Chandran Karuvaththil from the 2001-05 EEE batch. He shared his experiences and insights, offering valuable guidance and motivation to the students. Later on another engaging alumni interaction was conducted for S5 EEE students with Adheesh Sabu and Renjith of the 2015–2019 EEE batch, on 30 July, 2025 where they shared valuable career experiences and guidance.

FACULTY ACHIEVEMENTS

PAPER PRESENTATION

- **Ms.Ashna Mohan virtually presented the paper titled, “Integrated Approach for Improved Fault Ride Through in Grid-Connected Inverters” at the Sixteenth International Conference on Computing, Communication and Networking Technologies (ICCCNT 2025), held from 6 to 11 July 2025 at IIT Indore, in association with IEEE Electronics Packaging Society and AICTE.**

- **Ms.Rajitha A R virtually presented the paper titled, “Electrochemical Modeling and Parametric Analysis of Lithium Iron Phosphate (LFP) Battery for Optimum Design” at the Sixteenth International Conference on Computing, Communication and Networking Technologies (ICCCNT 2025), held from 6 to 11 July 2025 at IIT Indore, in association with IEEE Electronics Packaging Society and AICTE.**

STUDENT ACHIEVEMENTS

PAPER PRESENTATION

Two student teams successfully presented their research papers at the National Power Conference 2025, held on 8 July, 2025 at Muthoot Institute of Technology and Science, in association with the KSEB Officers Association. The paper titled, "The Circular Economy in Practice: Compilation of Sustainable Business Practices" was presented by Sreelakshmi V Prabhu, Brian Roy Mathew, Alen Babu of S5 EEE guided by the faculties Dr.Sreena Sreekumar and Prof.Anitha P. Another paper titled, "Next-Generation Intelligent Energy Management Through Smart Metering" was presented by Sanchu M, Adwin M S, Aparna Sunil, and Vishwas V Pai of the 2021–2025 EEE batch guided by the faculties Dr.Sreena Sreekumar and Ms.Akhila K.

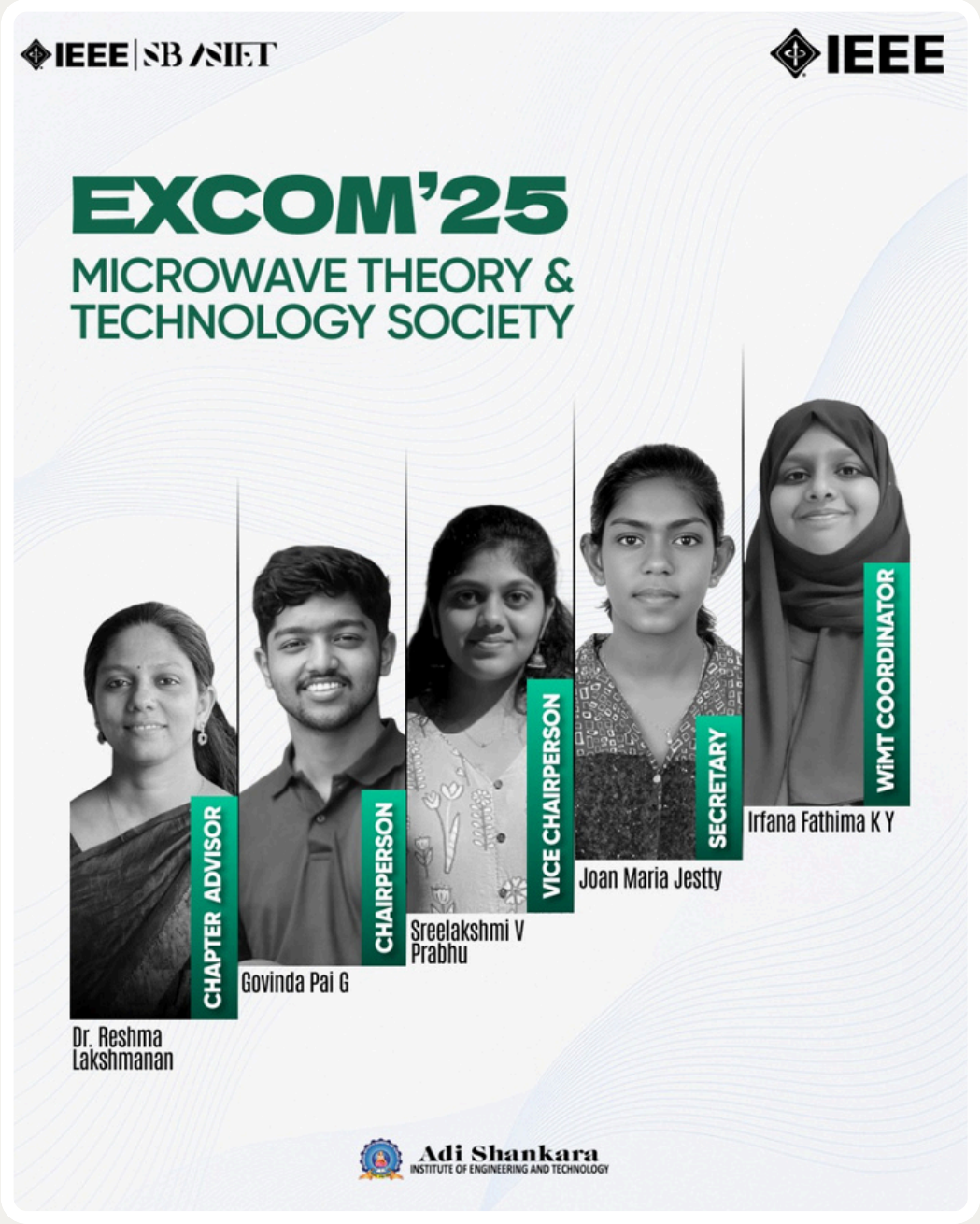
STUDENTS ACHIEVEMENTS

Jeon Jiju of S5 EEE along with three other team members won second prize in the ARDU-ABLE contest organised by IEEE SSCS Kerala Chapter in association with IEEE SB MITS on 13 July, 2025 at Muthoot Institute of Technology and Science.

STUDENTS ACHIEVEMENTS

Athul Asok of S3 EEE was selected as the Outreach Lead of TinkerHub ASIET.

STUDENTS ACHIEVEMENTS



Sreelakshmi V Prabhu of S5 EEE was selected as the Vice Chair of IEEE MTT-S SBC ASIET.

STUDENTS ACHIEVEMENTS

IMPACT OF AGENTIC AI ON GRID-CONNECTED RENEWABLE ENERGY SYSTEMS

Dr. S Subiramoniyan
Associate Professor

Executive Summary

The integration of agentic artificial intelligence (AI)—AI systems capable of autonomous, adaptive decision-making—has the potential to significantly enhance the efficiency, reliability, and scalability of grid-connected renewable energy systems.

While the benefits are substantial, the deployment of such systems raises critical policy, regulatory, and cybersecurity challenges that must be proactively addressed.

Key Impacts of Agentic AI

- Grid Stability and Flexibility: Supports real-time balancing of supply and demand and facilitates fast adaptation to the variability of solar and wind energy.
- Improved Forecasting: Enhances accuracy in generation and demand forecasting, reducing dependency on fossil-based reserves.
- Distributed Energy Resource (DER) Optimization: Coordinates the operation of rooftop solar, wind turbines, battery storage, and electric vehicles. Enables peer-to-peer energy exchange and local grid balancing.
- Operational Efficiency: Reduces human intervention and enhances predictive maintenance, lowering O&M costs.

- Decentralized Control and Transactive Energy: Supports autonomous microgrids and smart contracts for energy trading between prosumers.
- Sustainability and Climate Goals: Increases renewable penetration, contributing directly to net-zero targets and carbon reduction.

Policy and Regulatory Considerations

Domain	Considerations
Safety & Reliability	Mandate fail-safe mechanisms for autonomous systems.
Cybersecurity	Require secure AI protocols, encryption, and anomaly detection.
Transparency	Encourage development of explainable AI (XAI) systems for auditability.
Accountability	Define legal frameworks for AI-related decision liability.
Standardization	Develop interoperability standards between AI agents and legacy grid infrastructure.
Ethical Use	Ensure AI decisions align with public interest and equity.

Recommendations

- Regulatory Sandbox Programs - Pilot agentic AI use cases under controlled environments with flexible regulation.
- National AI Guidelines for Energy Sector - Establish a policy framework outlining AI use, safety protocols, data governance, and ethical standards.
- Incentives for AI-Renewable Integration - Offer R&D grants or tax incentives for utilities adopting AI-based DER management.

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Conclusion

Agentic AI can serve as a transformative enabler in modernizing grid infrastructure, maximizing renewable energy utilization, and accelerating the transition toward a sustainable, decentralized energy future. However, strategic governance, ethical oversight, and clear regulatory guidance are essential to ensure safe, equitable, and effective deployment..

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