KPR Institute of Engineering and Technology
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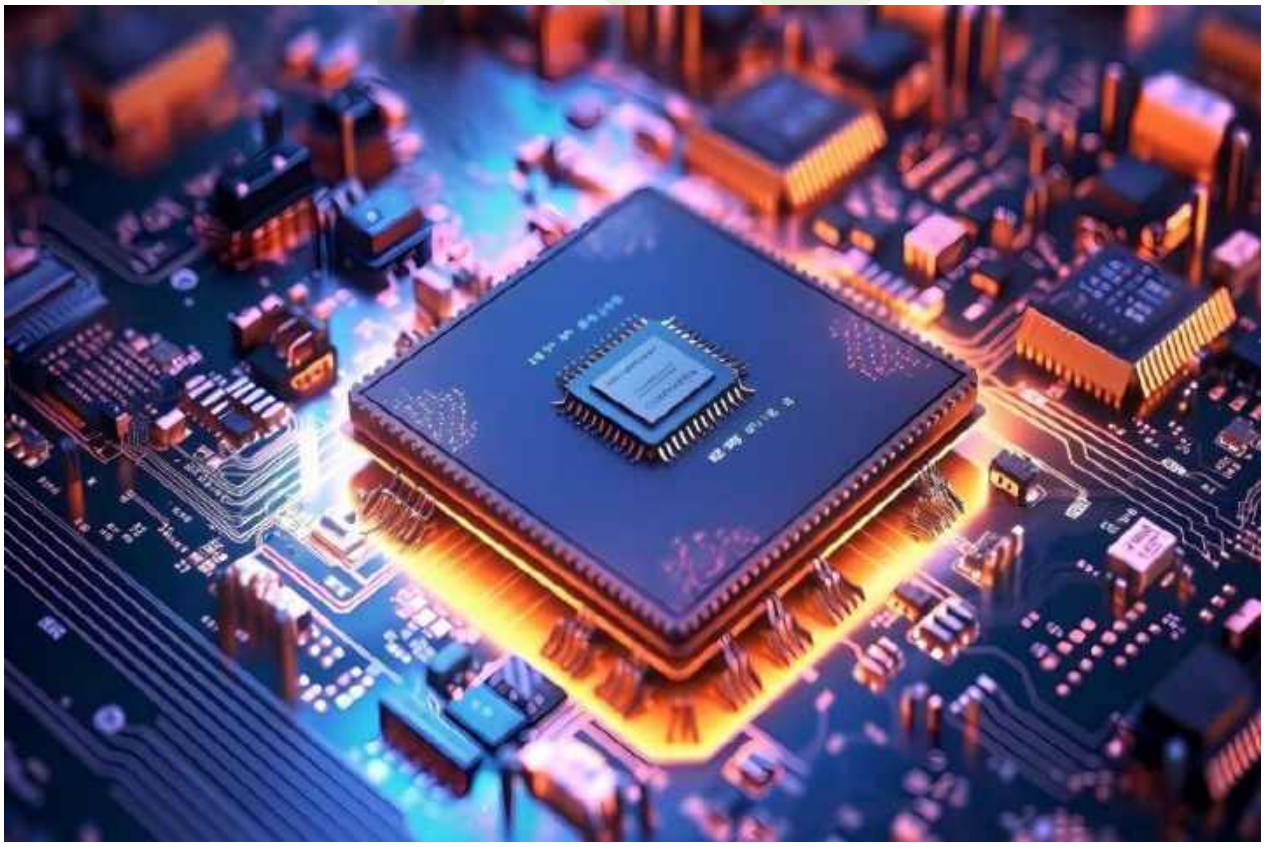
Avinashi Road, Arasur, Coimbatore - 641 407
LEARN BEYOND

Department of Electronics and Communication Engineering
(Accredited by NBA)

Volume No.11 - Issue 1



EDITORIAL BOARD

Vision

To be a center of excellence for education, research and development in the field of Electronics and Communication engineering to meet the growing needs of society.

Mission

- Develop competencies in emerging technologies through skill-based education collaborating with industries of repute
- Provide conducive environment for research and innovation to cater to the needs of society
- Inculcate professionalism, ethical values and lifelong learning

Program Educational Objectives

- PEO1: Apply principles of Electronics and Communication Engineering to provide solutions to the emerging problems in society.
- PEO2: Embrace technological challenges through skill upgradation or higher education or research.
- PEO3: Exhibit leadership qualities with professional and ethical values

EVENTS ORGANIZED

How to Prepare Your Career

The Department of Electronics and Communication Engineering **(**ECE) organized an Alumni Activity titled "How to Prepare Your Career?" on 9th August 2025 from 11:00 AM to 12:00 PM. The session was conducted on campus in II ECE A Classroom for ECE students, aligning with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure. The event was coordinated by Dr. Seethalakshmi V. (Convenor) and Mr. Aswin S. (Coordinator). The guest lecture was delivered by Mr. Aswin M.M., Engineer – DEV, Commvault Systems, and was attended by 40 students, spanning three academic hours.

The lecture focused on effective career planning, skill enhancement, and preparing for industry demands. Key topics included setting clear career goals, developing technical and soft skills, building a strong professional profile, leveraging networking opportunities, and staying updated with evolving industry trends. Through an interactive session, students gained practical insights, clarified their career aspirations, and learned strategies for long-term professional success. The event received highly positive feedback from participants, who appreciated the practical guidance and real-world advice shared by the resource person. The program successfully bridged academic learning with industry expectations, equipping students with tools and strategies to navigate their future careers effectively.

Hackzilla 24 Hour Hackathon

The Department of ECE organized Hackzilla, a 24-hour national-level hackathon, on 12th and 13th September 2025, conducted on campus as part of the IEEE ComSoc Student Tech Leadership Conference. The event was coordinated by Dr. Finney Daniel Shadrach S (EC036) and Dr. Venugopal D (EC063), and aligned with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure. With the theme "Innovate for Sustainable Connectivity", the hackathon was open to UG and PG students working in teams of four to five members, and witnessed the enthusiastic participation of 500 external students.

The 24-hour hackathon provided a dynamic platform for innovation, collaboration, and problem-solving, bringing together participants from various institutions to work on real-world problem statements across domains such as AI, IoT, sustainability, and smart systems. Teams developed creative prototypes and received continuous guidance through mentoring sessions led by industry experts and faculty members, which helped participants refine their ideas and gain valuable hands-on exposure.

The valedictory ceremony was graced by Mr. M. Sai Prashanth, Chair, Student Activities, IEEE ComSoc Member Services Board, and Dr. Rajanikanth Aluvalu, Director, Symbiosis Institute of Technology, Hyderabad, who congratulated the participants, presented prizes to the winning teams, and delivered inspiring reflections on innovation and leadership. The hackathon significantly enhanced students' technical skills, teamwork, critical thinking, and presentation abilities while strengthening industry–academia connections and opening pathways for future collaborations and project incubation. Overall, Hackzilla 2025 was a remarkable success, leaving a strong impact on participants and motivating them to pursue innovation, research, and entrepreneurship.

Hands-on Training on Modern EDA Tools for Digital Design

The Department of ECE organized a Hands-on Training on Modern EDA Tools for Digital Design on 23rd August 2025 from 10:00 AM to 04:00 PM at the Digital Systems and Network Laboratory. This institute-level expert session, aligned with SDG 4: Quality Education, was conducted for students and coordinated by Dr. Indra J (Convenor, EC098) and Dr. Pandiyan P (Coordinator, EE070). A total of 25 participants attended the program. The training was delivered by Mr. S. Raja, Product Development Engineer, Silicon Systems, Coimbatore, who provided in-depth guidance on industry-grade Electronic Design Automation (EDA) tools widely used in semiconductor and VLSI design environments.

The session aimed to bridge the gap between academic learning and real-world industry practices by offering students practical exposure to digital design workflows. Through real-time demonstrations and guided exercises, participants gained hands-on experience in using modern EDA tools, understanding digital design methodologies, and applying best practices followed in professional design environments. They also learned to implement, simulate, and verify digital circuits effectively, enhancing their technical proficiency and preparing them for future roles in VLSI and embedded system design.

The event significantly improved students' understanding of the digital design process, strengthened their practical skill set, and fostered industry-oriented competencies. Overall, the training was well received and succeeded in empowering students with essential skills required for modern electronic design and automation.

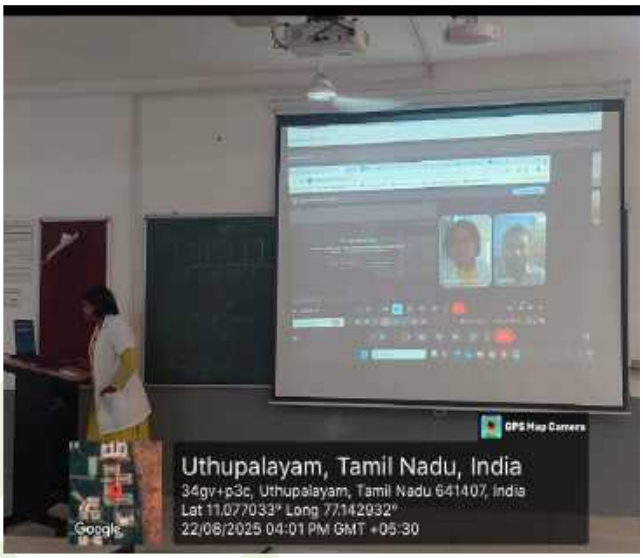
The Industrial Evolution of VLSI

The Department of ECE organized an online Expert Talk on “The Industrial Evolution of VLSI” on 22nd August 2025 from 2:30 PM to 4:30 PM through Google Meet. This department-level program, aligned with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure, was conducted for students and coordinated by Dr. Sharmi Ganguly (Coordinator & Co-Convenor) and Dr. Kalirajan K (Convenor). A total of 34 participants attended the session from the venue EC II C. The resource person for the event was Dr. Sumit Saha, Compact Device Modelling Engineer, INTEL Corporation, who shared valuable insights into global VLSI advancements.

The expert talk focused on the recent trends and industrial evolution within the VLSI sector, highlighting how rapid technological innovations continue to shape modern semiconductor design and manufacturing. Dr. Sumit Saha elaborated on cutting-edge developments in device modelling, scaling challenges, and the shift toward high-performance, low-power architectures. He also emphasized the strong connection between ECE domains and the semiconductor industry, providing students with a clear understanding of how their academic knowledge aligns with ongoing technological transformations at companies like Intel.

The session offered students a deeper perspective on career opportunities, skill expectations, and emerging research areas in VLSI. Participants gained clarity on industry workflows, upcoming trends, and the essential competencies required to contribute to global semiconductor advancements. The event received positive feedback

for its informative content and its role in bridging academic learning with real-world industry insights.

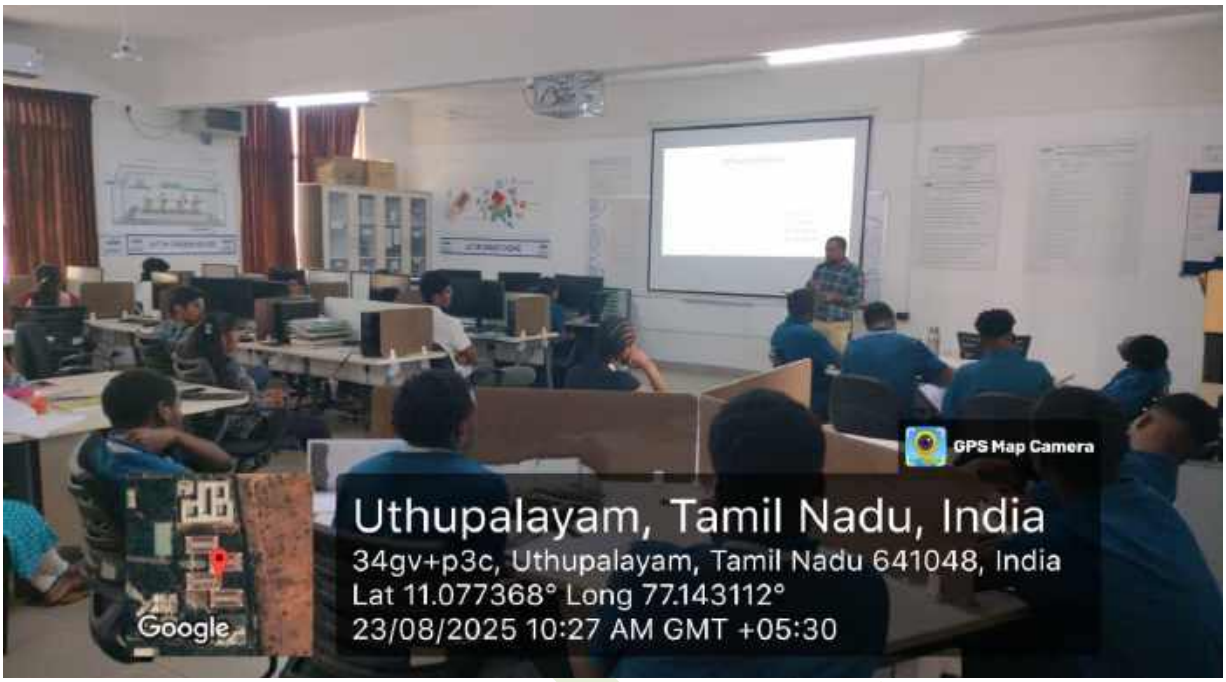


IOT Based Smart Systems

The Department of ECE organized an Expert Talk on “IoT Based Smart Systems” on 23rd August 2025 from 9:00 AM to 4:30 PM at the ECE Board Room. This department-level program, aligned with SDG 4: Quality Education, was conducted for teaching faculty members to enhance their understanding of emerging IoT technologies and smart system applications. The event was coordinated by Dr. Arijit De (Convenor, EC120) and Dr. Jaikumar R (Convenor, EC110).

The expert lecture was delivered by Mr. Karthick Sundar, Senior Tech Lead at MulticoreWare, Coimbatore, who shared his expertise on advanced Internet of Things architectures, smart system design, and real-world IoT deployments. The session provided detailed insights into modern IoT frameworks, communication protocols, edge computing, and integration of intelligent systems across various domains.

The program aimed to enrich faculty members with updated technical knowledge and equip them with industry-relevant perspectives that can be incorporated into teaching and research. The session played an important role in bridging technological advancements with academic delivery, thereby supporting continuous learning and strengthening institutional competency in IoT-driven innovations.



IBM Quantum Qiskit Framework

The Department of ECE organized an online expert talk on "IBM Quantum Qiskit Framework" on 25th August 2025 from 6:00 PM to 8:00 PM. This national-level program, aligned with SDG 4: Quality Education, was conducted for teaching faculty members to enhance their knowledge of quantum computing and the IBM Qiskit framework. The session was coordinated by Dr. Arijit De, Dr. Debashish Pal, and Dr. Kalamani M (Convenor), and featured Mr. Jayakumar Vaithiyashankar, Chief Executive Officer, Anuthantra Pvt Ltd, as the resource person.

The expert talk focused on practical applications of the IBM Quantum Qiskit framework, introducing participants to quantum computing principles, quantum circuit design, and programming using Qiskit. The session provided faculty members with hands-on insights into leveraging quantum computing tools for research, teaching, and emerging applications. The program successfully bridged advanced technological concepts with academic understanding, equipping participants with knowledge and skills relevant to the evolving field of quantum computing.

Inauguration of SPARTRANZ and IETE –
The Students Association of ECE

The Department of ECE, KPRIET, organized the Inauguration of SPARTRANZ – The ECE Students Association along with the IETE Students Forum (ISF) on 8th August 2025 from 2:00 PM to 4:00 PM at Raagam Hall. This department-level association activity, aligned with SDG 4: Quality Education, was conducted for students and coordinated by Mr. Jakir Hussain G.K. and Dr. Ashish Ranjan Shadangi, with 350 participants attending. The event was graced by Dr. Ashok Vajaravelu, Faculty of Electrical and Electronics Engineering, Universiti Tun Hussein Onn, Malaysia, as the Chief Guest.

The inauguration marked the formal commencement of association and forum activities for the academic year. The program began with a welcome address, followed by the introduction of office bearers and the unveiling of the yearly plan for SPARTRANZ and ISF. Dr. Ashok Vajaravelu delivered an inspiring address on the significance of innovation, research, and leadership in engineering education, motivating students to actively engage in technical and co-curricular activities to enhance their knowledge and professional skills. The event also featured vibrant technical and cultural segments, reflecting the creativity and talent of the student community, and witnessed enthusiastic participation from both faculty members and students. The inauguration successfully provided a platform to foster student leadership, teamwork, innovation, and professional growth, laying the foundation for a productive and engaging academic year.

Alumni Talk on "Demystifying SAP Technology: What Juniors Must Know?"

The Department of ECE organized an Alumni Talk on "Demystifying SAP Technology: What Juniors Must Know?" on 9th September 2025 from 10:00 AM to 12:00 PM in II ECE C Classroom. This department-level activity, aligned with SDG 4: Quality Education, was coordinated by Dr. S. Suganyadevi, Assistant Professor-II and convened by Dr. K. Kalirajan, Professor and Head of the Department of ECE. The session was delivered by Mr. P. Siva Pradeep, SAP Fullstack Techno-Functional Consultant, Kaar Technologies India Pvt. Ltd., and a proud alumnus of the department, and was attended by 71 students.

The talk focused on providing juniors with insights into SAP technology, its real-world applications, and industry expectations. Mr. Siva Pradeep elaborated on the scope of SAP in enterprise solutions, the demand for techno-functional consultants, and the essential skills required to enhance employability. The session was highly interactive, allowing students to clarify doubts about SAP modules, career paths, and industry readiness. Participants gained valuable understanding of ERP solutions in today's IT landscape, practical career guidance, and motivation to explore SAP as a potential career domain. The event successfully bridged academic learning with industry perspectives, empowering students to prepare effectively for future career opportunities.

PG Inauguration

The Department of ECE, in association with CS, SE, VL, and DS departments, organized the Postgraduate Program Inauguration on 10th September 2025 from 9:00 AM to 4:00 PM at Pallavi Hall. This institute-level orientation program, aligned with SDG 4: Quality Education, welcomed the incoming postgraduate students of the 2025–2027 batch for the departments of M.E. VLSI Design, M.E. Structural Engineering, M.Tech. Data Science, and M.E. CSE. The event was convened and coordinated by Dr. Karthikeyan K, Dr. Vishnu Kumar K, Dr. Pandiyan P, and Dr. Dharmaraj R, with participation from 56 students.

The inauguration provided students with a comprehensive understanding of the institute, introducing them to the academic culture, administrative processes, and the variety of support systems available, including research facilities, career development, and student affairs. The program featured sessions by key resource persons, including Dr. B. Nagarajan, Dr. R. Maheshwar, Dr. S.M. Senthil, Dr. D. Balaji, Dr. A. Balamurugan, Dr. B. Thamarai Kannan, Dr. V. Rajeshkumar, Mr. N. Udhayakumar, and Dr. P. Ravi Kumar, who provided guidance on academic excellence, institutional best practices, and student engagement initiatives.

The two-day event also included tours of essential facilities such as the Centre of Excellence and the respective departmental labs, helping students acclimate to their new academic environment. Overall, the inauguration successfully oriented the postgraduate

cohort, familiarizing them with institutional resources, fostering engagement, and setting the foundation for a productive and enriching academic journey.

VAC Training Program

The Department of ECE organized a VAC / Training Program on 24th September 2025 from 9:00 AM to 4:00 PM at the DSN Laboratory. This department-level program, aligned with SDG 4: Quality Education, was conducted for 71 students and 7 internal faculty members to enhance their practical knowledge and hands-on skills in relevant areas. The event was coordinated by Ms. Saranya M.D. (Coordinator, EC086) and Mr. Ram Nivas D (Coordinator, EC097).

The training session was led by a team of resource persons from KPR Institute of Engineering and Technology, including Dr. J. Muralidharan, Mr. D. Ram Nivas, Dr. J. Prasad, Dr. Ashish Ranjan Shadangi, Ms. Saranya M.D., and Ms. M. Supriya, who provided guidance, demonstrations, and hands-on exercises to ensure participants gained practical exposure. The program focused on developing technical competencies, understanding relevant procedures, and applying theoretical knowledge in a lab environment.

The VAC program successfully enhanced students' practical skills, reinforced faculty guidance, and provided a collaborative learning platform, helping participants to integrate academic knowledge with real-world applications. Overall, the event was highly effective in fostering technical understanding, teamwork, and professional growth among the students.

Hands-on Workshop on Op-Amp Mastery: Design, Analyze, Amplify

The Department of ECE, in association with ISTE, organized a Hands-on Workshop on “Op-Amp Mastery: Design, Analyze, Amplify” on 27th September 2025 from 9:00 AM to 5:00 PM at the DSN Laboratory. This department-level workshop, aligned with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure, was conducted for 35 students and coordinated by Dr. J. Muralidharan. The session was led by Dr. K. Subramanian, Technical Support Manager, OmniWOT Technologies, who provided expert guidance on analog electronics and operational amplifier applications.

The workshop focused on design principles, circuit analysis, and practical applications of operational amplifiers, combining theory, simulation, and hands-on circuit building. Participants actively designed, built, and tested amplifier circuits, explored simulation tools, and developed system-level analog solutions. The program enhanced students’ technical skills, analytical thinking, and teamwork, equipping them with practical knowledge applicable to careers in electronics, embedded systems, and biomedical device design. Overall, the workshop successfully bridged academic concepts with real-world applications, providing a comprehensive learning experience in analog electronics.

Expert Lecture on "Opportunities in AI and Cloud"

The Department of ECE organized an Expert Lecture on "Opportunities in AI and Cloud" on 27th September 2025 from 11:00 AM to 12:30 PM in III ECE A. This department-level alumni activity, aligned with SDG 4: Quality Education, was coordinated by Dr. K. Murugan and Ms. M. Supriya, and attended by 25 internal students and 25 other participants. The session was delivered by Mr. M. Kishore, Technical Lead at Tata Consultancy Services, Chennai, who provided expert insights into the evolving landscape of artificial intelligence and cloud computing.

The lecture focused on emerging trends, tools, and platforms in AI and Cloud, industry-use cases, and real-world applications. Participants learned about various career pathways, skillsets, certifications, and project opportunities needed to stay future-ready in these domains. The interactive session included Q&A and discussions, enabling students to clarify doubts and explore ideas in AI and Cloud. The program successfully raised awareness about emerging technologies, motivated participants, and provided guidance on building strong career foundations, helping students understand industry expectations and plan for future-ready careers.

Practical IoT and Industrial Automation for Industry 4.0

The Department of ECE organized a hands-on training program on "Practical IoT and Industrial Automation for Industry 4.0" on 22nd September 2025 from 9:00 AM to 4:00 PM at the Centre for IoT. This national-level program, aligned with SDG 4: Quality Education and SDG 9: Industry, Innovation and Infrastructure, was coordinated by Dr.

R. Jaikumar, Ms. S. Priyadharsini, and Ms. S. Gunanandhini and attended by 26 external students. The session was conducted with resource persons Mr. R. Jaikumar, Ms. S. Priyadharsini, Ms. S. Gunanandhini, and Mr. S. Gowtham, Technical Lead, all from KPRIET.

The program provided participants with practical exposure to IoT applications in industrial automation, bridging the gap between academic concepts and real-world Industry 4.0 practices. Students gained hands-on experience in designing and developing functional IoT-based automation systems, configuring IoT devices, integrating them with cloud platforms for real-time monitoring, and implementing basic industrial automation using PLCs, sensors, and actuators. The workshop also emphasized teamwork, problem-solving, and project development skills, enabling participants to build complete IoT solutions from concept to prototype, including the use of 3D printing for functional prototypes. Overall, the event successfully enhanced technical competency and industry readiness, providing a strong foundation for students to engage with modern industrial automation and smart manufacturing technologies.

Data on the Move: The Science of Networking

The Department of ECE, in association with IEEE AP-S KPRIET Student Branch, organized an Expert Lecture on “Data on the Move: The Science of Networking” on 27th September 2025 from 9:30 AM to 4:00 PM for 65 students and 2 faculty members. This club/society-level activity, aligned with SDG 4: Quality Education, was coordinated by Dr. T. Venkatesh and Mr. T. Shanmugaraja, and

conducted in II ECE A. The session was delivered by Mr. S. Santhosh, Network Engineer II at Comcast, who shared his expertise on modern networking technologies, data transmission, and the evolving landscape of communication systems.

The lecture provided students with practical insights into networking fundamentals and advancements, including network layers, data transmission methods, network security, and emerging technologies, with real-time industry examples. The interactive session allowed participants to relate academic concepts to real-world networking practices and explore potential career pathways in network engineering. By the end of the event, students gained practical knowledge of data communication, networking principles, security, and industry-relevant skills, inspiring them to pursue certifications and careers in networking. The session received highly positive feedback, with participants appreciating the speaker's clarity, examples, and engaging delivery, which significantly enhanced their technical understanding of networking systems.

AI/ML and Emerging Trends in VLSI, Healthcare, and Communication Technologies

The Department of ECE, KPR Institute of Engineering and Technology, organized a Short-Term Training Program (STTP) on "AI/ML and Emerging Trends in VLSI, Healthcare, and Communication Technologies" from 22nd to 26th September 2025 in online mode. The national-level program, aligned with SDG 4: Quality Education, was coordinated by Dr. K. Kalirajan and Dr. Rima Deka, and attended by 50 external students and 15 external faculty members.

The sessions were delivered by distinguished academicians including Dr. Kandarpa Kumar Sarma (HoD, Gauhati University), Dr. Kaushik Guha (Associate Professor, NIT Silchar), Dr. Abhisheik Das (Associate Professor, Aliah University), Dr. Sabyasachi (Assistant Professor, Barak Valley Engineering College), Dr. MWP Maduranga (Senior Lecturer, University of Jayewardenepura), Dr. Swagata Devi (Assistant Professor, Assam Down Town University), and Prof. Sugumaran (Assistant Professor, Vishnu Institute of Technology). The program provided participants with expert knowledge and exposure to the latest developments in VLSI design, healthcare

innovations, and communication technologies with AI/ML applications, fostering a platform for interactive learning and knowledge sharing.

A total of 65 participants, including faculty members, research scholars, and students from various educational institutions, benefited from the STTP, gaining insights into emerging technologies and practical applications of AI/ML in engineering and healthcare domains. The sessions were highly informative and motivated participants to explore research and career opportunities in these cutting-edge areas.

MoU Signing Ceremony

The Department of ECE, KPR Institute of Engineering and Technology, Coimbatore, signed a Memorandum of Understanding (MoU) with the Indian Institute of Technology (IIT) Palakkad on 21st July 2025. The MoU was carried out with the support of Dr. J. Indra, Professor and Division Head (D). This collaboration aims to promote joint research activities, faculty and student interactions, expert lectures, workshops, and academic knowledge exchange. The partnership is expected to enhance research exposure and foster innovation among faculty members and students.

The Department of ECE, in association with the Institution's Innovation and Partnership Cell (IIPC), successfully organized a MoU Signing Ceremony between KPR Institute of Engineering and Technology (KPRIET) and Pi Square Technologies India Pvt. Ltd. (PSTI) on 17th September 2025 at the KPR Knowledge Campus. The event witnessed the formalization of a strategic collaboration aimed at implementing

the global "QNX Everywhere" initiative, fostering innovation in embedded systems and automotive technology.

Through this partnership, KPRIET students and faculty will gain access to the BlackBerry QNX Software Development Platform (SDP), a world-leading technology used in over 255 million vehicles and critical medical systems. This initiative provides unique opportunities for faculty development, student certifications, and hands-on exposure to high-demand industry practices in Embedded Systems, IoT, and Industrial Automation.

The MoU is expected to strengthen the institute's commitment to quality education and skill development by integrating industry-relevant software tools into the curriculum. This collaborative effort effectively bridges academic learning with real-world industrial applications, preparing students for professional growth in the global technology landscape.

FACULTY PUBLICATIONS

- Marianna Biscarini, Arijit De, Lorenzo Luini, Carlo Riva, Antonio Martellucci, and Roberto Nebuloni published a paper on "Advanced Fade Mitigation Techniques for Q/V Band SatCom Systems" in the *International Journal of Satellite Communications and Networking* (1–9, 1 August 2025, SCI Q2). https://onlinelibrary.wiley.com/doi/10.1002/sat.70007.

- K. R. Sabarmathi & M. Kalamani published "Scientific retrieval: an effective heuristic-aided multi-scale adaptive transformer network for information retrieval process from scientific publications" in *Knowledge and Information Systems* — https://link.springer.com/article/10.1007/s10115-025-02458-7

- Thangavel Kuntavai, Arijit De, Hichem Bencherif & Debashish Pal published "Device Engineering and Optimization of a Novel Zintl-Phosphide $BaCd_2P_2$ Absorber-Based Thin Film Photovoltaic Cell" in *physica status solidi (a)* — https://onlinelibrary.wiley.com/doi/abs/10.1002/pssa.202500371.

- B. Bazeer Ahamed, Debashish Pal, Pranoy Ghosh, and Arijit De published "An innovative machine learning based approach for predicting the efficiency of a chalcogenide perovskite semiconductor photovoltaic cell" in *Optical and Quantum Electronics*. This study presents a machine learning framework to accurately predict the performance and efficiency of chalcogenide perovskite solar cells, offering insights that could accelerate the design of high-efficiency photovoltaic devices. https://link.springer.com/article/10.1007/s11082-025-08463-y

- Sharmi Ganguly & Kaushik Misra published *"Chemical Route Synthesis of Copper Oxide Nanoflowers and Their Antibacterial Application"* in Journal of Technology — the work demonstrates a chemical-route synthesis of copper-oxide nanoflower nanostructures and evaluates their antibacterial performance.https://drive.google.com/file/d/1i4zwlTOekxJM_m76p-GQIIqRLd-2ZC_-/view.

- Sharmi Ganguly, Joydip Sengupta & Chaudhery Mustansar Hussain published "Advances in Paper-Based Ammonia Sensors in Environment: Sustainable Materials, Nanotechnology Integration, and Smart Analytical Platforms" in *Earth: Environmental Sustainability* — this review highlights recent advances in sustainable, low-cost paper-based ammonia sensors using natural dyes, nanomaterials, and conductive polymers; the platforms include colorimetric, electrochemical and chemiresistive approaches, with some achieving detection down to ppb levels and enabling applications in environmental monitoring, food quality, and occupational safety. https://www.sciltp.com/journals/eesus/articles/2509001385 sciltp.com.

- S. Usha, Saroj Bala, M. D. Saranya & S. Suganyadevi published *"Pixelated disparity network for hepatocellular carcinoma recognition from ultrasound images"* (Volume 16, Article 113, September 2025) — read it here: https://link.springer.com/article/10.1007/s12530-025-09737-2

- P. Sukumar, S. M. Ramesh, Ravikumar Gurusamy, R. Menaka & S. Mohanasundaram published "A Precision BMI Monitoring System with Real-Time Alerts using SHAP and XGBoost based Interpretability" in the proceedings of the 2025 4th International Conference on Innovative Mechanisms for Industry Applications (ICIMIA) (ISBN: 979-8-3315-5385-2). This work presents a machine-learning-based BMI monitoring framework — combining the predictive power of XGBoost with interpretability via SHAP — and supports real-time alerts for health monitoring. https://doi.org/10.1109/ICIMIA67127.2025.11200647.

- S. R. Menaka, S. Mohanasundaram, P. Sukumar, S. M. Ramesh & Ravikumar Gurusamy published *"DistilBERT-Powered Optimized Sentiment Analysis for Next-Generation Natural Language Processing"* in the proceedings of 6th International Conference on Smart Electronics and Communication (ICOSEC 2025) (ISBN: 979-8-3315-9858-7). This work leverages the compact transformer model DistilBERT to build an optimized sentiment-analysis system for modern NLP applications — offering faster inference, reduced computational overhead, and reliable sentiment classification performance.

- S. M. Ramesh, Ravikumar Gurusamy, S. R. Menaka, S. Mohanasundaram & P. Sukumar published "CNN-Faiss Pipeline for High Performance Animal Vocalization Retrieval and Classification" in the proceedings of the 2025 IEEE International Conference on Electronics and Sustainable Communication Systems (ICESC-2025) (ISBN: 979-8-3315-5502-3). This work presents a hybrid pipeline combining convolutional neural networks (CNN) with a vector-search engine (Faiss) to efficiently retrieve and classify animal vocalizations — enabling scalable high-performance analysis of bioacoustic data for wildlife monitoring and ecological research.

- D. M. Gokul Varshan, A. Sakira Parveen, J. Indra, Goutam Kumar Mahato & S. P. Sundar Singh Sivam published *"Predictive machine learning models for assessing the long-term stability of biodegradable scaffolds"* in *Machine*

Learning for Medical Applications – Volume II: Computer Vision, Image Processing, Disease Detection & … (De Gruyter Brill). This chapter explores how machine-learning models can be used — instead of or alongside traditional experiments — to predict the degradation behavior and long-term stability of biodegradable tissue-engineering scaffolds by combining data from multiple sources and using longitudinal analyses. The approach aims to accelerate scaffold design, reduce cost and experimental burden, and improve reliability in predicting scaffold performance prior to fabrication. https://www.degruyterbrill.com/document/doi/10.1515/9783112205198-011/html.

- R. Senthil Kumar, S. Saravanan, P. Pandiyan & P. Balakumar contributed the chapter "Control Systems Optimization Using AI in Mechatronics Engineering" in the book *Handbook of AI-Based Mechatronics Systems and Smart Solutions in Industrial Automation* (CRC Press, 2025). https://www.taylorfrancis.com/chapters/edit/10.1201/9781032615790-6/control-systems-optimization-using-ai-mechatronics-engineering-senthil-kumar-saravanan-pandiyan-balakumar?utm_source=chatgpt.com.

- G. Pradeepkumar, T. Priya Devi, S.A. Suje, S. Gobinath & M. Dhanapal published "Integrated Real-Time Object Detection and Navigation Framework for Autonomous Vehicles on Raspberry Pi" in *Smart Trends in Computing and Communications* (Springer Nature Singapore). This work proposes a real-time object detection + navigation framework tailored for autonomous vehicles implemented on low-cost/hardware-constrained edge platforms (e.g. Raspberry Pi), combining computer-vision based detection with navigation logic — making autonomous navigation more accessible and embedded-friendly. https://link.springer.com/chapter/10.1007/978-981-96-7807-5_15.

- G. Pradeepkumar, R. Pavithramathi, J. Jahina & K. Tamilselvan published *"Wireless Sensor Network Optimization in IoT Landslide Detection Systems*

Using Zigbee Protocol" in the book *Smart Trends in Computing and Communications* (Springer Nature Singapore).This work discusses how to optimize a wireless sensor network (WSN) built with the protocol for landslide detection in IoT-based environmental monitoring — enhancing energy efficiency, reliability and data communication for early-warning systems. https://link.springer.com/chapter/10.1007/978-981-96-7807-5_8.

- Dr. T.Jagadesh published a patent (Application No: 202541077305 A) titled "System For Managing Personal Finances" on 13.08.2025.

- Dr. Muralidharan J published a patent (Application No: 202541080638) titled "Enhancing Road Safety and Network Intelligence through AI-Driven 6G-Enabled V2X Communication" on 26.08.2025.

- Mr Ram Nivas D published a patent (Application No: 202541080638) titled "Automated Framework For Analyzing English Literary Texts Using Machine Learning Techniques In Higher Education" on 18.09.2025.

- Dr.B.Jaishankar published a patent (Application No: 202541109254) titled "A system and method for image super resolution using enhanced generative adversial networks" on 11.11.2025.

STUDENT PARTICIPATION

S.No	Event Name	No of students participated
1	Online course	55
2	Workshop	17

3	Contest (Quiz, Coding Contest, club events, etc.)	27
4	Paper presentation	44
5	Internship	74
6	Project Presentation	2
7	NSS, YRC activities	2

STUDENT ACHIEVEMENT

S.No	Name of the Student(s)	Achievements /Awards / Acitivities	Title of the Event	Organized by (Name of the College and club)
1.	Sanjai Sree N (II EC)	Activity: Linux Administrator for Datacenter	Internship/Training	KPRIET
2.	Ahileswari A (II EC)	Participation	Theervu'athon 2025	PSG College of Arts and Science
3.	Arun Prassath G K (II EC)	Participation	SENSONICS 2025	Kongu Engineering College
4.	Arun S (II EC)	Sports Activity	CM Trophy 2025	Sports Development Authority of Tamil Nadu
5.	Arun S (II EC)	Sports Activity	Anna University Zone-IX	KPRIET
6.	Dharaneesh M (II EC)	Sports Activity	Independence Day Trophy	Karpagam College of Engineering
7.	Dharaneesh M (II EC)	Sports Activity	AU Zone-IX Football Tournament	KPRIET
8.	Guruppriya RS (II EC)	Participation	Theervu'athon 2025	PSG CAS / KPRIET
9.	Hari Prakash U (II EC)	Participation	SENSONICS	Kongu Engineering College
10.	Ilakkiya V (II EC)	Participation	IPM Nexus 25	KPRIET

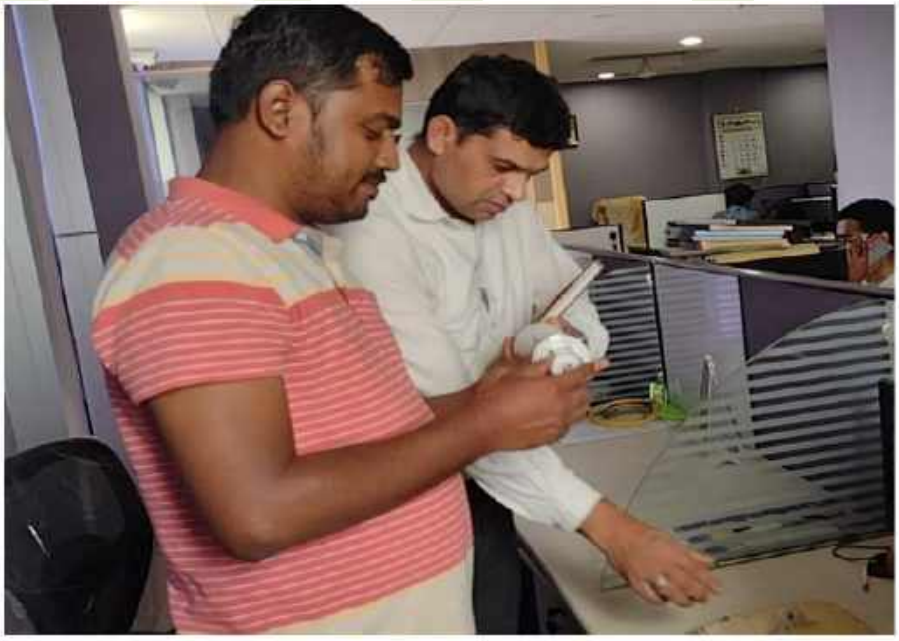
11.	Jayasurya D R (II EC)	Course (26 Days)	Remote Sensing & Digital Image Analysis	ISRO - IIRS
12.	Jerlinjeba M J (II EC)	Multi-Event Participation	Project-A-Thon / Microsensors	KPRIET / PSG CAS
13.	Manoj Kumar K K (II EC)	Participation	SENSONICS	Kongu Engineering College
14.	Muberekwa Fortune F (II EC)	Technical Event	InnovX / Nexcodua	Christ the King / Velammal Institute
15.	Nehaa M R (II EC)	Technical Event	CONSCIENTIA 25	IIST (Indian Inst. of Space Science & Tech)
16.	Pravin P (II EC)	Technical Event	CONSCIENTIA 2025	IIST

IIPC ACTIVITIES

Faculty Internship

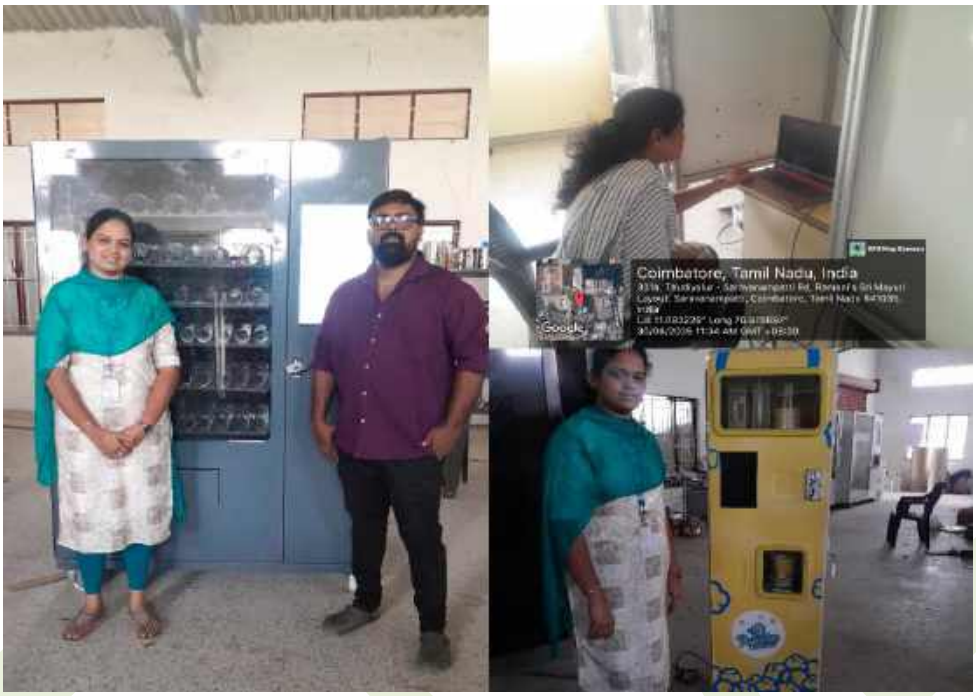
Dr. Arjit, Assistant Professor, Department of Electronics and Communication Engineering, successfully completed a one-week internship at Mechmet Engineers, Coimbatore, from June 9, 2025, to June 13, 2025. The internship provided valuable exposure to advanced manufacturing practices, industrial process optimization, and strategies for institutional-industry engagement.

Dr. J. Prasad, Assistant Professor, Department of Electronics and Communication Engineering, successfully completed a one-week internship at Zepto Logic Technologies Private Limited, Coimbatore, from June 26, 2025, to July 3, 2025. The internship offered in-depth exposure to embedded systems, IoT applications, and industry-focused research collaborations.



As part of ongoing IIPC initiatives to strengthen industry-academia collaboration and enhance faculty expertise in emerging technologies, industry visits and internships were undertaken during June–July 2025.

From June 30, 2025, to July 6, 2025, Ms. Suganyadevi successfully completed a one-week internship at Mechmet Engineers, providing valuable exposure to modern industrial automation practices and production systems. She explored the applications of AI-assisted industrial vision systems, learning how automated imaging technologies are used for defect detection, measurement accuracy, and classification in high-precision production lines.



Dr. Sharmi Ganguly, Assistant Professor (III), Department of Electronics and Communication Engineering, successfully completed a one-week internship at Farmish Live Private Limited from July 5, 2025, to July 11, 2025. The internship provided valuable insights into sustainable technology development, agricultural innovation, and institutional growth strategies.

As part of the IIPC initiatives to strengthen industry-academia collaboration and provide experiential exposure, Dr. R. Jaikumar, Assistant Professor, Department of Electronics and Communication Engineering, successfully completed a one-week internship at TOP CLASS ENTERTAINMENT LLP, Coimbatore, from July 5, 2025, to July 11, 2025. The internship offered unique insights into media technologies, creative content development, and the role of digital innovation in the entertainment industry.

Ms.S.Priyadharshini, Assistant Professor, Department of Electronics and Communication Engineering, successfully completed a one-week internship at TOP CLASS ENTERTAINMENT LLP, Coimbatore, from July 5, 2025, to July 11, 2025. The internship offered unique insights into media technologies, creative content development, and the role of digital innovation in the entertainment industry.

As part of the ongoing IIPC initiatives to strengthen industry-academia collaboration, promote innovation-driven learning, and provide faculty with real-time industrial exposure, Dr. M. Kalamani and Dr. R. Jaikumar undertook an industry visit

to the Centre of Excellence – IoT at PSG iTech, Coimbatore, on July 16, 2025. The visit served as an enriching platform to understand the latest advancements in Internet of Things (IoT), explore collaborative opportunities with a premier research centre, and identify pathways to integrate industrial practices with academic learning.

Industry Visit

S no	Date	Industry/ College Name	Collaborator Location	Faculty Involved	Outcome
1.	04/08/2025	Zara Wire Technologies	Gandhipuram	Dr. T. Jagadesh	Discussion on MoU, industrial training, internships, and consultancy projects.
2.	04/08/2025	Inventor Automation	saravanampatti	Dr. T. Jagadesh	Exploring internship prospects and hands-on training modules in automation and control systems.
3.	07/08/2025	Real Tech Systems	Saravanampatti	Mr. G. K. Jakir Hussain	Identifying capstone project topics and real-time

					industrial problem statements for final-year students.
4.	08/08/2025	Zepto Logic Technologies	Ganapathy	Dr. J. Prasad	Facilitating faculty consultancy, joint research projects, and R&D collaboration.
5.	08/08/2025	Enthu Technology Solutions	Goldwins	Mr. G. K. Jakir Hussain, Ms. T. S. Anju	Field visit for II ECE 'B' students; discussions on IoT and embedded systems internships.
6.	11/08/2025	Salzer Electronics	Chinnamathampalayam	Dr. M. Kathirvelu, Dr. D. Venugopal	Internships in electrical switchgear and collaborative consultancy for product testing.
7.	13/08/2025	Csuite Tech Labs	Gandhipuram	Dr. J. Prasad, Dr. M. Singaram	Finalizing an Industry-Oriented One-Credit Course in Cyber Security, AI, and Full Stack Development.
8.	14/08/2025	Indus Electronics India	Goldwins	Dr. T. Jagadesh	Structuring internships focused on electronics design, testing, and manufacturing.
9.	14/08/2025	Zenfet Technologies	Saravanampatti	Dr. T. Jagadesh	Internships and project-based learning in Embedded Systems and

					IoT development.
10	19/08/2025	ZF Wind Power	Kittampalayam	Dr. Himangshu Deka, Mr. D. Ram Nivas	Field visit for II ECE students to study wind turbine production and renewable energy technology.
11	23/08/2025	Mobitech Wireline Solutions	Perundurai	Dr. V. Seethalakshmi	Wireline & communication solutions, specialized equipment, operational workflows, and real-world technological challenges.
12	26/08/2025	Sri Ram Electric Controls and Drives	Kalapatti	Dr. J. Prasad	Automotive control panel design, safety requirements, components, wiring, and integration for the automotive sector.
13	26/08/2025	Crompton Electricals	Ganapathy	Dr. J. Prasad	High-volume manufacturing processes, electrical system design/testing, and exposure to Industry 4.0 technologies.
14	01/09/2025	Softelectronet	Vilankurichi	Dr. T. Jagadesh	Embedded systems, IoT applications, and electronics product development; hands-on training and

					skill enhancement.
15	01/09/2025	Modern Cable Corporation	Coimbatore	Dr. T. Jagadesh	Manufacturing and testing of electrical cables, production lines, quality control, and safety practices.
16	01/09/2025	Velsons Engineering Private Limited	Ganapathy	Dr. T. Jagadesh	Hands-on understanding of engineering operations, production processes, and professional standards.
17	02/09/2025	MS Transformers	Sulur	Dr. J. Prasad	Power transformer design, manufacturing, winding, core assembly, testing, and maintenance.
18	04/09/2025	MSM Energy Enterprises	Gandhipuram	Dr. K. B. Gurumoorthy	Curriculum enhancement, aligning course content with current technological trends, and skill requirements in the energy sector.
19	12/09/2025	Silicon Systems	Kalapatti	Dr. J. Prasad	In-depth technical sessions, exposure to specialized tools, R&D processes, and mentorship opportunities.

20	12/09/2025	Nayara Solutions	Kalapatti	Dr. J. Prasad	Defining technical and project-based roles, duration/structure of the program, and selection process.
21	12/09/2025	Wireline Solutions (India) Pvt. Ltd.	Gandhipuram	Dr. J. Prasad	Field operations, fiber-optic network infrastructure, network analysis, and specialized equipment handling.
22	12/09/2025	Sunshine Electronics	Town Hall	Dr. J. Prasad	Practical skill application, exposure to industry standards (quality control/safety), and professional mentorship.
23	13/09/2025	Magnetic and Control	Thudiyalur	Dr. V. Seethalakshmi	Observation of specialized magnetic technology and integrated control systems; real-world engineering applications.
24	17/09/2025	Nandha College of Technology	Perundurai	Dr. B. Jaishankar	Conducted specialized training on Printed Circuit Board (PCB) design, covering schematic

					creation, routing, and industrial practices.
25	17/09/2025	Erode Sengunthar Engineering College	Perundurai Road	Dr. B. Jaishankar, Mr. T. Shanmugaraja	Conducted specialized training on PCB design, focusing on fundamentals, hands-on demonstration, and industry-oriented learning.
26	19/09/2025	Sunloop Energy	Sulur	Dr. T. Jagadesh	Hands-on experience in renewable energy (solar systems), installation, testing, and energy monitoring technologies.
27	24/09/2025	Real Tech Systems	Saravanampatti	Dr. K. Murugan	Designed structured itinerary to provide students with a first-hand view of industrial environments, infrastructure, and production processes.
28	29/09/2025	Signal and Telecommunication Workshop	Podanur	Dr. B. Jaishankar, Dr. Suganyadevi S.	Observation of railway Signaling Systems and Telecommunication Infrastructure in a safety-critical environment.

29	29/09/2025	Effica Automation	Neelambur	Dr. T. Jagadesh	Groundwork for formal partnership (MoU), identified consultancy areas, and planned training modules in automation.
30	29/09/2025	Elmer LED	Neelambur	Dr. T. Jagadesh	Identified internship roles in LED design, PCB fabrication, lighting system testing, and quality assurance.
31	29/09/2025	M S India Transformers India Private Limited	Sulur	Dr. T. Jagadesh	Focused on roles in transformer assembly, coil winding, insulation techniques, and high-voltage testing procedures.


Zepto Logic Technologies Pvt Ltd
Coimbatore Tamil Nadu India
3/668, Nalvar Nagar, Kalveerampalayam, Coimbatore, Tamil Nadu 641046, India
Lat: 11.04 | Long: 76.89
08/08/2025 4:10 pm, IST
Fri, 8 Aug
Google


GPS Map Camera
Check In
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Lat 11.16326° Long 76.934269°
11/08/2025 03:02 PM GMT +05:30


Coimbatore,Tamil Nadu,India
Lat 11.039693, Long 77.049156
08/09/2025 12:43 PM GMT +05:30
Note: Captured by GPS Map Camera


Gandhipuram, Tamil Nadu, India


GPS Map Camera
Kittampalayam, Tamil Nadu, India
45jh+vc9, Kittampalayam, Tamil Nadu 641659, India
Lat 11.13158° Long 77.17897°
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mobitech
wireless solution
IRRIGATION AUTOMATION
மொபிடெக்
Perundurai, Tamil Nadu, India


SRI RAM ELECTRIC CONTROLS
AND DRIVES
Kalapatti Tamil Nadu India
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26/08/2025 0:10 pm, IST
Tue, 26 Aug
Google


Bilichi, Tamil Nadu, India
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TPEG
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02/09/2025 11:48 am, IST
Tue, 2 Sep
Google


Coimbatore Tamil Nadu India
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SILICON SYSTEMS
RECEPTION
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Bilichi, Tamil Nadu, India
Google


Perundurai, Tamil Nadu, India
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Lat 11.280768° Long 77.599043°
24/09/25 12:44 PM GMT +05:30


Podanur, Tamil Nadu, India
Google

Consultancy Details

S.No	Faculty involved	Event/Activity	Date	Amount ₹
1.	Dr. M. Kathirvelu Mr G K Jakir Hussain	Antenna Fabrication	19.08.2025	12,980
2.	Dr.P.Pandiyan, AsP/ECE	Project development- Smart Digital Display for factory Protocol and Safety Awareness	23.08.2025	5250
2.	Dr. B. Jaishankar	PCB design and consultancy services (Chip Crafts, Coimbatore)	20.09.2025	20,000
3.	Dr.V.Seethalakshmi	Antenna testing and measurement services	25.08.2025	11,800
			30.08.2025	2360
			30.08.2025	4,130
			30.08.2025	4,720
			22.09.2025	19,000
4.	Dr Rima Deka Dr K Kalirajan	STTP on AI/ML and emerging trends in VLSI healthcare and communication technologies	22-26 September 2025	20,600
5.	Dr J Indra Mr Balamurali	National level Technical Symposium TechAura 2.0 by IEEE Circuits and Systems Society	26.09.2025	86,400

PLACEMENT ACTIVITY

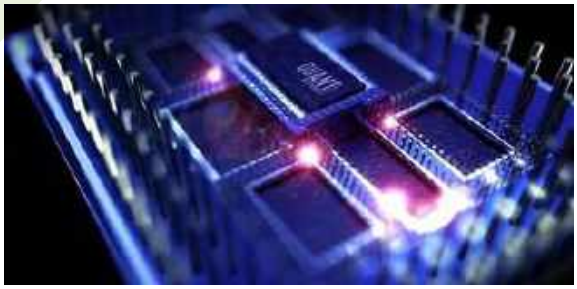
S.No	Company Name	Sector (Core / IT)	No. of Students Placed
1	ABB India	Core	5
2	Kone Elevators	Core	10
3	AMD	Core	2
4	AMI	Core	1
5	Johnson Electric	Core	1
6	Kaar Technologies	IT	2
7	Zoho Corp	IT	1
8	Schneider Electric	Core	1
9	Mallow Technologies	IT	2
10	Virtusa	IT	3
11	SmartDV	Core	3

LATEST INNOVATIONS

Transcending Silicon: Revolutionary Chip Materials

Prepared by: Ms Sushma V R – I-ME VLSI Design

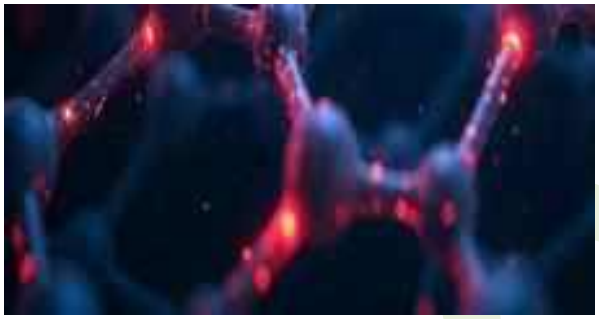
As silicon technology reaches its physical limits, emerging materials are redefining the future of electronics with superior speed, efficiency, and scalability.



Why Beyond Silicon?

Modern technologies such as artificial intelligence, quantum computing, and electric vehicles require materials that offer higher performance and lower power consumption than silicon.

KEY INNOVATIONS



The Alloy Innovations:

German scientists created CSiGeSn, a novel stable alloy that combines electrical logic with light-based photonics on a single chip, by fusing carbon, silicon, germanium, and tin. Imagine smooth quantum interfaces devoid of cumbersome hybrids; this could revolutionize floorplanning for reversible gates.

Wins for Crystals and Superconductors:

Crystals of indium selenide produce perfect wafers for next-generation transistors, increasing chip yields in large-scale manufacturing. At accessible 3.5 Kelvin, gallium-doped germanium achieves superconductivity, opening zero-loss pathways for ultra-fast, cool-running quantum machines.

The 2D Integration and the Future :

In sub-2nm nodes, graphene layers and III-V compounds such as indium phosphide increase transistor speeds while reducing leakage. 3D packaging stacks powered by multi-oxide stacks and 2D chalcogenides are ideal for power-optimized adders in imprecise computing processes.