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# ECHOES

DEPARTMENT OF  
ELECTRONICS AND COMMUNICATION ENGINEERING

# FACULTY TEAM



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### From HoD desk

It gives me immense pleasure to present the latest edition of the Department of Electronics and Communication Engineering Newsletter, highlighting the remarkable achievements, innovative initiatives, and outstanding contributions of our students and faculty.

Our continuous focus on experiential learning, cutting-edge research, and industry collaboration has empowered our students to develop real-world solutions, compete at national and international forums, and secure prestigious opportunities in leading organizations.

This issue covers diverse activities from the successful 24-Hour Learnathon, industry visits, and Fab Lab advancements, to breakthrough research in 5G technologies and Quantum Communication. I am proud to see our students and faculty striving for excellence, demonstrating technical prowess, and making significant contributions to emerging technologies that shape the future of electronics and communication.

I congratulate all the achievers for their hard work, dedication, and innovative spirit. Let us continue to nurture creativity, foster scientific curiosity, and develop industry-ready professionals who will lead and transform the world.

**DR. I. GOVARDHANI**  
**HOD-ECE**

## ABOUT DEPARTMENT

Engineering (ECE), established in 1983, boasts 120 distinguished faculty members, including 101 with PhD degrees, while others are pursuing PhDs. Faculty with rich industry experience cater to both academic and industry needs. State-of-the-art laboratories, Centers of Excellence, and Research Centers support UG, PG, and PhD students, emphasizing R&D activities and innovative exploration beyond the curriculum.

With Rs. 259 million in sponsored projects from DST, ISRO, and others, the department showcases a strong research culture, publishing over 3300 peer-reviewed articles. The vibrant academic calendar includes advanced certificate courses, seminars, visiting foreign faculty, and student paper contests. Student development programs, industry alliances, and active associations further enhance the department's offerings.

### **VISION**

To become a world-class department in the frontier regions of Electronics & Communication Engineering.

### **MISSION**

- To bring forth graduates possessing professional excellence.
- To conduct quality research with social & industrial application.
- To render technical assistance in converting the learners into entrepreneurs.

# PULSE

## WHERE IDEAS TRANSFORM INTO IMPACT

PULSE, the official student body of the ECE Department, is more than a club – it's a catalyst for growth, leadership, and bringing out the best in every student. Rooted in collaboration, innovation, and empowerment, PULSE transforms classroom learning into real-world impact.

By bridging theory and practice, it helps students develop essential skills like teamwork, decision-making, and problem-solving. It's where engineers don't just build systems – they learn to lead them.

Through cultural, technical, and recreational events, PULSE becomes a space for self-discovery, inspiring confidence, creativity, and lifelong connections. It's a launchpad for both personal and professional excellence.

### Past Events by PULSE

- Idol of ECE – A circuit-based competition that tested students' technical skills and crowned top talent.
- Learnathons – 24-hour problem-solving marathons that promoted creativity and collaboration.
- Technical Sessions – Expert-led workshops that enhanced knowledge on electronics and emerging technologies.
- Circuit Crusade – A challenge focused on testing students' fundamentals in basic electronics and circuits.

### Upcoming Events by PULSE

- Tejomayam – Continuing the tradition of paying tribute to teachers.
- Treasure Hunt – A new edition with more engaging and challenging tasks.
- Project Expo – Another opportunity for students to showcase their innovative projects.
- Build-athon – A hands-on event encouraging students to design and build solutions.
- And many more – Exciting cultural, technical, and recreational events in the pipeline.

These events are not only milestones in the academic calendar but also serve as launchpads for innovative ideas, leadership opportunities, and a strong sense of community engagement.

PULSE continues to represent the spirit of ambition, collaboration, and excellence within the ECE Department. It provides every student with the platform to contribute meaningfully, grow confidently, and pursue their aspirations with purpose.



# KLEF SOARS TO NEW HEIGHTS IN SPACE RESEARCH

**A HISTORIC TRIPLE SATELLITE LAUNCH BY THE DEPARTMENT OF ECE LAUNCHES KLSAT-2, CANSAT, AND KLJAC — PIONEERING STUDENT-LED SPACE INNOVATION**

18<sup>th</sup> October 2025, Vaddeswaram:



In a landmark achievement that has set a new benchmark in student-driven research and innovation, Koneru Lakshmaiah Education Foundation (KLEF) successfully launched three indigenously developed satellites KLSAT-2 (2U CubeSat), KLJAC (Lightweight Pico Balloon Satellite), and CanSat (4U Module) from its Vaddeswaram Campus. This remarkable feat signifies KLEF's unwavering commitment to advancing space technology, interdisciplinary learning, and innovation excellence.

The mission, conceptualized and executed by the Department of Electronics and Communication Engineering, was led by the KLSAT Team under the RF & Microwave Centre of Excellence, in collaboration with the Andhra Pradesh State Council of Science & Technology (APCOST) and REDWING. The project embodies the spirit of "Education through Innovation" and showcases the university's capability to transform visionary ideas into tangible space technology.

The historic launch was graced by esteemed dignitaries including Shri Kanumuru Raghu Rama Krishna Raju Garu, Deputy Speaker, Andhra Pradesh Legislative Assembly; Shri Bhupathi Raju Srinivasa Varma Garu, Union Minister of State for Heavy Industries & Steel; Ms. Koneru Nikhila Karthikeyan; Dr. G. P. Saradhi Varma, Vice-Chancellor; and Shri Koneru Satyanarayana Garu, Chancellor, KLEF. The presence of distinguished guests from ISRO, APCOST, academia, and industry made the event even more momentous.

**Pioneering Missions that Redefine Student Innovation**  
 Each of the three satellites carried unique objectives that showcased the students' technical excellence and creativity.

**KLSAT-2 (2U CubeSat):**

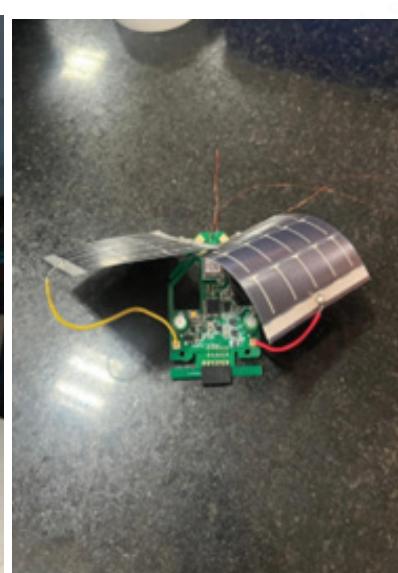
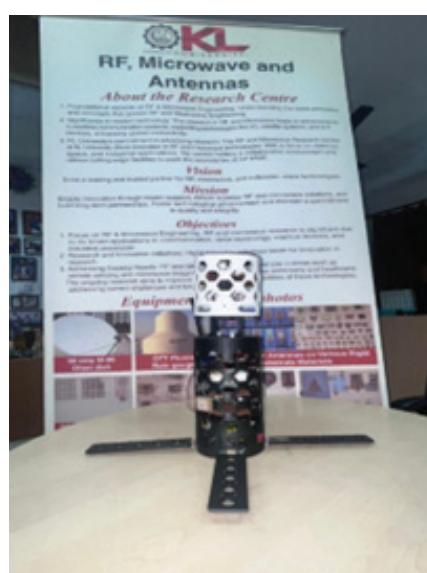
An upgraded version of KLSAT-1, equipped with a Hybrid Aeroswift VTOL module for environmental monitoring and real-time data collection. It marked India's first student-led drone-assisted CubeSat deployment.

**CanSat (4U Module):**

Shortlisted for the national CanSat Competition by IN-SPACE, ISRO, and ASI, this model featured a Hybrid Coaxial Tricopter and a parachute recovery system, reflecting innovation in miniaturized satellite design.

**KLJAC (Pico Balloon Satellite):**

An ultra-light satellite for Tropospheric research, capable of long-duration flight. It traveled nearly 800 km at 14 km altitude, transmitting live atmospheric data and establishing itself among India's smallest educational satellites.

**VOICES OF VISION AND INSPIRATION*****Er. Koneru Satyanarayana, Chancellor, KLEF, expressed his pride:***

“Our vision has always been to transform education into innovation. This achievement by our students is a proud reflection of that philosophy. When youth are given access to technology, mentorship, and imagination, they can truly reach for the stars.”

A team of 34 dedicated students, guided by Dr. K. Ch. Sri Kavya, Mission Director, KLSAT, and Dr. K. Sarat Kumar, Member Secretary, APCOST, worked tirelessly through every phase – from concept and design to flight and recovery. One of the student members shared,

*“Watching our satellite lift off was an emotional moment. It symbolized months of hard work, teamwork, and perseverance turning into success.”*



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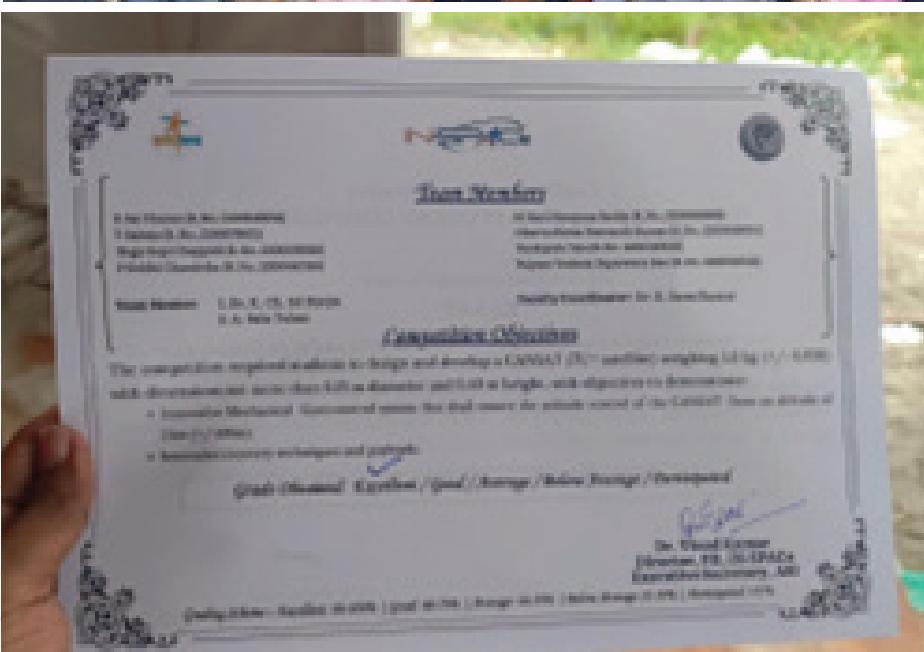
*This achievement not only marks a defining moment in the Department of ECE's journey but also serves as an inspiration for aspiring innovators across the nation – proving that with passion, guidance, and innovation, the sky is not the limit, but only the beginning.*

# KL UNIVERSITY SECURES “EXCELLENT GRADE” AT NATIONAL CANSAT COMPETITION 2024–2025

Students from the Department of Electronics and Communication Engineering, KL Deemed to be University, Vijayawada, achieved an “Excellent Grade” at the National CANSAT Competition 2025, held at Kushinagar. The event was organized under the guidance of the Astronautical Society of India (ASI) and IN-SPACe-ISRO.

The competition challenged students to design and develop a CANSAT (7U+ satellite) capable of performing real-time data acquisition, telemetry transmission, and innovative recovery operations. KL University's CANSAT team showcased outstanding innovation in satellite payload design and mechanical gyro-control systems, earning national-level recognition for their technical excellence and teamwork.

This achievement highlights the department's commitment to nurturing space technology innovation and hands-on learning among young engineers.



## INSIDE THE FAB LAB TOOLS THAT POWER INNOVATION

### MUFFLE FURNACE ROOM NO: R001 EXPLORE THE TOOL : MUFFLE FURNACE

The Muffle Furnace is a high-temperature laboratory instrument designed to perform thermal treatments safely and reliably. Its insulated chamber provides uniform heating without direct flame contact, making it ideal for a variety of applications, including ashing, calcination, sintering, and annealing.

#### HOW IT WORKS:

The Muffle Furnace operates by heating an insulated chamber using embedded heating elements. The temperature is precisely controlled via a digital controller, ensuring uniform heat distribution around the samples. The insulation prevents direct flame contact, allowing safe and consistent thermal processing for materials.

#### APPLICATIONS

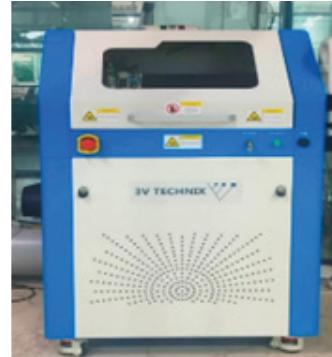
- Ash content determination of food, rubber, or polymer samples
- Calcination of inorganic compounds
- Loss on ignition (LOI) tests



## 3V TECHNIX INDUSTRIAL LASER MARKING MACHINE

### EXPLORE THE TOOL : INDUSTRIAL LASER MARKING MACHINE

The machine shown is an Industrial Laser Marking Machine from 3V TECHNIX, also known as a Laser Engraving or Etching System. It is designed to create permanent, high-contrast marks, codes, text, and graphics on a wide range of materials with precision and efficiency.



#### HOW IT WORKS:

The machine uses a Fiber Laser directed through high-speed mirrors (galvanometers) onto the material's surface. The laser energy ablates, melts, or foams the surface, creating precise, durable, non-contact markings. A fully enclosed cabinet with a viewing window and safety controls ensures safe operation in industrial settings.

#### APPLICATIONS

- Marking serial numbers, date codes, and batch information for product traceability.
- Engraving logos, designs, and text for branding and aesthetics.
- 3. Marking small electronic components, PCBs, and device casings safely.
- 4. Creating durable identification on metal and plastic parts in automotive and aerospace industries.

## ACHIEVEMENTS IN BUILDATHON AND IIOT WORKSHOP



Students participated in the Buildathon and IIOT Technical Project Expo held during SAMYAK, showcasing innovation and technical excellence. Some students secured Winner and Runner-up positions for their creative, practical, and problem-solving project contributions.

<b>BUILDATHON</b>			
	WINNERS		RUNNERS
2300040361	MALLAMPATI SU-MANTH	2300040292	SOMIREDDI INDRA-NI
2300040351	SUNKARAPALLI JYOTHSNA	2300040395	KATTOJU KOUSHIK
2300040336	CHODISETTI USHA AMRUTHA	2300040368	NEMALA DHANA BABU
2300040404	DINTAKURTHI HARSHA SAI	2300040413	SANKU RAJESH

<b>IIOT INDUSTRIAL WORKSHOP</b>			
	WINNERS		RUNNERS
2300040453	VISHNUBOTLA CHANDRA SEKHAR BHARGAV	2300049053	VINNAKOTA NITHISH KUMAR JOSHI
2300049001	MEDA SIVA SAI RA-GHAVENDRA PRASAD	2300049067	KOWTHARA-PU VENKATA HEMANTH KUMAR
2300049027	VEMULAKONDA JA-GANNADHANAGA SAI	2300049071	MASIMUKKU PARDHASARDHI
		2300049074	AILA VIVEK VARD-HAN

## SKILL PALAVER LEARNATHON HIGHLIGHTS



The Department of Electronics and Communication Engineering actively participated in the Skill Palaver – Learnathon, organized under the Skill Development Courses to enhance students' practical knowledge and innovation skills. The initiative aimed to bridge the gap between theory and real-world engineering applications, encouraging students to think creatively and work collaboratively on problem-solving tasks.

Throughout the Learnathon, participants showcased exceptional enthusiasm, teamwork, and technical understanding. They worked intensively on projects focused on VLSI Design and Embedded Systems, developing innovative solutions that reflected strong analytical skills and hands-on expertise.

## ECE STUDENTS SUCCESSFULLY COMPLETE TARUS INDUSTRIAL TRAINING GLOBAL CERTIFICATION COURSE



Students from the Department of Electronics and Communication Engineering have successfully completed the Tarus Industrial Training Global Certification Course. This achievement reflects their commitment to continuous learning and professional growth. The program provided valuable hands-on exposure to cutting-edge technologies and industry practices, helping students strengthen their technical foundation and global competence in various domains.

## **PH.D. VIVA-VOCE EXAMINATIONS – CELEBRATING RESEARCH EXCELLENCE**

The Department of Electronics and Communication Engineering proudly announces the successful conduct of Ph.D. Viva-Voce examinations for its research scholars, marking yet another milestone in academic excellence and research contribution. The department extends heartfelt congratulations to the scholars and their respective supervisors for their dedicated efforts and valuable contributions to advancing research in emerging technologies.

### **1. KADHAM NITHIN RAO (Reg. No: 163040051)**

Thesis Title: **“A Design Model for Multi-Layer Authentication and Adaptive Sensor Data Transmission in Internet-of-Things Virtual Lab Platforms.”**

Supervisor: Dr. P. Gopi Krishna

Date: 22nd October 2025, 11:00 AM

### **2. U. GNANESHWARA CHARY (Reg. No: 2002041022)**

Thesis Title: **“Design and Implementation of Low Power Analog Front End (AFE) for 12 Lead Electrocardiogram (ECG).”**

Supervisor: Dr. K. Hari Kishore

Date: 23rd October 2025, 2:00 PM

### **3. SHAKEEL AHMED (Reg. No: 173040032)**

Thesis Title: **“Trust-Based QoS Aware Routing Optimization Algorithms for Intelligent Transport System.”**

Supervisor: Dr. N. V. K. Ramesh

Date: 23rd October 2025, 11:00 AM

### **4. S. UMMAY ATIYA (Reg. No: 173040029)**

Thesis Title: **“Enhancing Non-Small Cell Lung Cancer Treatment Planning with Deep Learning-Driven GTV Segmentation and Classification.”**

Supervisor: Dr. N. V. K. Ramesh

Date: 16th October 2025, 11:00 AM

### **5. G. SAI LAKSHMI (Reg. No: 193040020)**

Thesis Title: **“Design, Analysis, and Simulation of MEMS Pressure Sensor for Continuous Glucose Monitoring.”**

Supervisor: Dr. K. Srinivasa Rao

Date: 20th September 2025, 1:00 PM

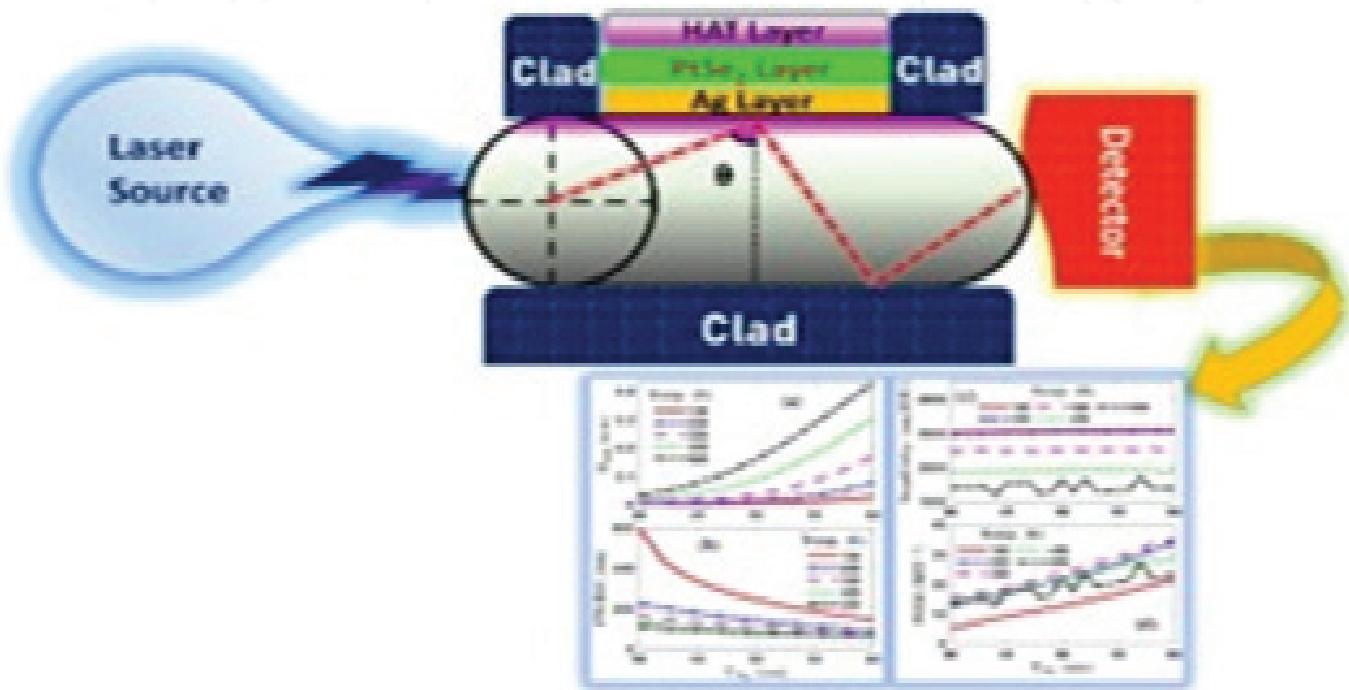
### **6. PUTTA RAMAKRISHNAVENI (Reg. No: 173040067)**

Thesis Title: **“Image Denoising and Multilevel Segmentation with Correlated Feature Subset for Brain Tumor Grade Detection.”**

Supervisor: Dr. M. Suman

Date: 18th September 2025, 2:00 PM

## DESIGN AND NUMERICAL ANALYSIS OF A TEMPERATURE-TUNED PLATINUM DISELENIDE SPR BIOSENSOR FOR HUMAN ADIPOSE TISSUE DETECTION



In this study, a surface plasmon resonance (SPR) biosensor utilizing platinum diselenide (PtSe<sub>2</sub>) and silver (Ag) for biosensing protocols is designed and simulated for the detection of human adipose tissues (HAT). Beyond the other members of the 2D material family, PtSe<sub>2</sub> remarkable optoelectronic capabilities have garnered significant interest in newly produced two-dimensional (2D) materials. PtSe<sub>2</sub> is a similar structure to graphene and phosphorene. We have used the transfer matrix method to study the SPR sensors through PtSe<sub>2</sub>. The predicted PtSe<sub>2</sub> biochemical sensors can detect analytic signals, according to the simulation results. The SPR biosensor demonstrates a maximum sensitivity of 3098 nm/RIU, suggesting its ability to detect minute refractive index changes with remarkable precision. Furthermore, a figure of merit of 34.95 RIU-1 demonstrates the biosensor's capacity to detect tiny fluctuations in target analyte concentration. Additionally, the remarkably low limit of detection (LoD) of  $7.3245 \times 10^{-4}$  ensures early and accurate detection.

By:  
**Dr. Chella Santhosh**  
Associate Professor

## FACULTY EXCHANGE PROGRAMME –STRENGTHENING GLOBAL ACADEMIC COLLABORATION



Tunku Abdul Rahman University of Management and Technology (TARUMT), Kuala Lumpur, Malaysia. As part of the Faculty Exchange Programme, a series of academic sessions and a research talk were organized at Tunku Abdul Rahman University of Management and Technology (TARUMT), Kuala Lumpur, Malaysia. The initiative, led by Dr. Muzammil Parvez from the Department of Electronics and Communication Engineering, aimed to strengthen academic collaboration between TARUMT and Koneru Lakshmaiah Education Foundation (KLEF).

The sessions focused on core areas such as Digital Communication, Digital Signal Processing, Digital System Design, and Embedded Systems, providing students with practical exposure and hands-on learning experiences. An engaging Arduino Workshop conducted on the Tinkercad platform introduced participants to circuit interfacing and programming fundamentals. The programme concluded with an insightful Research Talk on Thermal Signal Processing, which offered a deeper understanding of advanced engineering applications.

This exchange initiative fostered international academic engagement, promoted research collaboration, and enriched the global learning perspective of both institutions, reflecting KLEF's commitment to quality education and innovation-driven growth.

## PROUD ACHIEVEMENT: DR. VENKATA KISHORE K. HONOURED WITH IEEE MAPCON 2025 FACULTY TRAVEL TAWARD

Dr. Venkata Kishore Kothapudi, Assistant Professor, Department of Electronics and Communication Engineering, has been honoured with the IEEE MAPCON 2025 Faculty Travel Award for presenting his research work at the IEEE Microwave, Antennas, and Propagation Conference (MAPCON 2025) held in Kochi, Kerala, India.

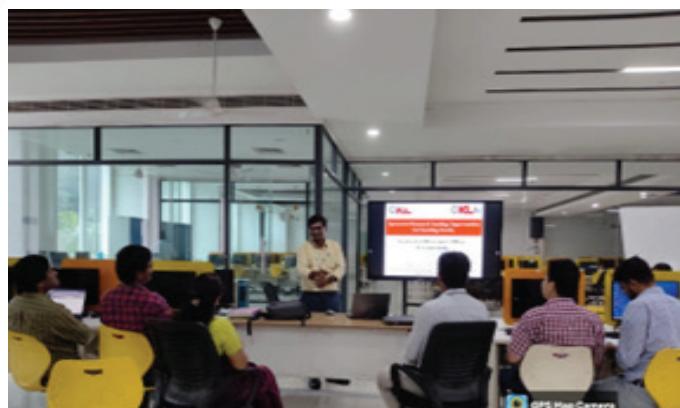
This recognition highlights his outstanding contribution to research and innovation in the field of Microwave and Antenna Engineering. Congratulations to Dr. Venkata Kishore K. on this remarkable achievement!



## FACULTY PARTICIPATION IN ISRO'S VENUS ORBITER MISSION ACADEMIC MEET



## FACULTY ORIENTATION LECTURE ON SPONSORED RESEARCH FUNDING OPPORTUNITIES



Dr. Sampad Kumar Panda, from the Department of Electronics and Communication Engineering, KLEF, participated in a two-day National Meet on "ISRO's Venus Orbiter Mission: Science and Enhancing Academia Engagements", organized by the Science Programme Office, ISRO Headquarters, Bengaluru, from 29th to 30th October 2025.

The event, inaugurated by Dr. V. Narayanan, Secretary, DOS/Chairman, ISRO, aimed to foster collaboration between ISRO and academia in advancing planetary science research and enhancing academic engagement in India's upcoming space missions.

A Faculty Orientation Lecture was organized on 26th September 2025 at 3:45 PM in Room R106 on the topic "Sponsored Research Funding Opportunities for Teaching Faculty."

The session was delivered by Dr. S. Arun Metha, who shared valuable insights into various national and international funding agencies, proposal writing strategies, and the importance of research collaborations. The lecture aimed to motivate faculty members to actively pursue sponsored research projects and enhance the institution's research ecosystem. Faculty members without classwork attended the session as per the scheduled instructions.

## ECE FACULTY LISTED AMONG THE TOP 2% SCIENTISTS FOR 2025

Some of the distinguished faculty members from the Department of Electronics and Communication Engineering, KL Deemed to be University, have been featured in the Top 2% Scientists List for 2025, published by Stanford University. This recognition stands as a testament to their remarkable research contributions, scholarly excellence, and global academic impact. The department proudly celebrates their achievement, which reflects KL University's strong commitment to research innovation and excellence in higher education.

S. No	Name of the Faculty	Department	EMP ID
1	Dr. B.T.P. Madhav	ECE	1737
2	Dr. Santosh Kumar	ECE	8622
3	Dr. Hasane Ahammad	ECE	6454
4	Dr. Zia Ur Rahman	ECE	3413
5	Dr. D.Venkata Ratnam	ECE	2684
6	Dr. Chella Santhosh	ECE	5439
7	Dr. Atul Kumar	ECE	6224
8	Dr. Sandip Swarnakar	ECE	8417
9	Dr. Yesudasu	ECE	7233

## ECE FACULTY HONOURED FOR EXCELLENCE IN SKILL DEVELOPMENT AT SAMYAK 2025



Faculty members from the Department of Electronics and Communication Engineering were honoured during Samyak 2025, the nationwide technical fest of KL Deemed to be University, for their outstanding contributions to skill-based education and technical training.

This recognition highlights the dedication and commitment of ECE faculty in mentoring students, promoting innovation, and integrating practical learning into the curriculum. Their continuous efforts play a vital role in shaping industry-ready engineers and advancing the department's mission of academic and technical excellence.

## EMPOWERING ECE MINDS: IEEE AT KLEF SPARKS INNOVATION

The IEEE Student Branch of KLEF, in association with the Department of Electronics and Communication Engineering, organized an interactive session titled "Innovate with IEEE: Learn the Path" on 16th October 2025 at Sunflower Hall. The session aimed to spread awareness among students about the diverse opportunities offered by IEEE and to encourage active participation in its professional and technical initiatives.

The event featured an engaging technical quiz, where students showcased their enthusiasm and knowledge. Dr. Usha Devi Yalavarthi, Associate Professor and IEEE SB Counsellor, addressed the gathering and emphasized the significance of IEEE membership in shaping professional and research careers. The session also highlighted the achievements of IEEE members from KLEF who have excelled in internships, research publications, and hackathons under IEEE sponsorship.



## SAMYAK TECHNO MANAGEMENT FEST 2025

### ECE DEPARTMENT – COMPREHENSIVE EVENT REPORT



The Department of Electronics and Communication Engineering at KL University actively participated in SAMYAK 2025, the national techno-management fest, by organizing a series of innovative and hands-on events. The fest served as a platform for students to showcase their creativity, technical skills, and teamwork while gaining exposure to emerging technologies and industry practices.

Workshops such as FPGA Essentials, Build-A-Thon, and IIoT and Automation encouraged practical learning through circuit design, embedded systems, and IoT-based applications. The Generative AI Workshop introduced students to creative computing and real-time AI project development, while Semi-Custom on Innovus enhanced their VLSI design skills using industry tools. Robotics enthusiasts demonstrated innovation through Line Follower and Soccer Robo, Space Soccer, and Space-a-thon, exploring control systems and satellite communication challenges.

Research-oriented events like the Project Expo, NanoXplore, and NanoCanvas fostered scientific curiosity and creativity, while the ROS Workshop provided hands-on experience in autonomous robotics and automation programming.

With over 400 students participating, SAMYAK 2025 highlighted the department's strong focus on innovation, interdisciplinary learning, and practical skill development. Each event reflected the ECE department's commitment to nurturing talent and inspiring future-ready engineers through experiential education.

## ANNOUNCEMENT OF WINNERS CIRCUIT CRUSADE 2025



**1<sup>ST</sup> PLACE**

P. SATISH  
2400040441



**2<sup>ND</sup> PLACE**

G. V. V. SUMANTH  
T2400040064



**3<sup>RD</sup> PLACE**

C. BALARAM  
2400040178



**4<sup>TH</sup> PLACE**

C. DHATRI  
2400040126

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**nirf** RANKED AMONG ALL UNIVERSITIES **22** 2024



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<https://www.kluniversity.in/ece/default.aspx>