



You Choose, We Do It

# St. JOSEPH'S COLLEGE OF ENGINEERING

(An Autonomous Institution)

St. Joseph's Group of Institutions

OMR, Chennai - 119



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

# Newsletter

September 2024



**St. JOSEPH'S**  
GROUP OF INSTITUTIONS  
OMR, CHENNAI - 119



*The Choice of*  
**Disciplined Toppers**



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**St. JOSEPH'S COLLEGE OF ENGINEERING**

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**Jeppiaar Educational Trust**

OMR, Chennai - 119.



## VISION

To become a world class renowned department where dissemination and application of knowledge in design and analysis of electronic circuits in the field of communication is delivered and to synergistically balance through relentless pursuit of student success towards the economic prosperity of the society and the world at large.

## MISSION

**Professionalism:** Achieve excellence in teaching, learning, and educational activities which ensure that each student has the opportunity to attain his or her fullest potential

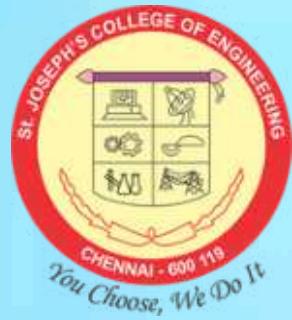
**Core Competence:** Inculcate innovative skills, research aptitude, team-work, ethical practices in students so as to meet expectations of the industry as well as society.

**Research:** Provide research and intellectual resources that address problems facing the industry and the world, while advancing the boundaries of disciplinary and multidisciplinary research and its applications.

**Industrial Interaction:** Provide professional development opportunities for all by creating an open and accessible learning environment and incorporating appropriate technology through collaboration with industry

## PROGRAM OUTCOMES

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or process that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal and environmental considerations.



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4. Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to proceed valid conclusions.
5. Modern tool usage: create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM EDUCATIONAL OBJECTIVES

1. To enable graduates to pursue research, or have a successful career in academia or industries associated with Electronics and Communication Engineering, or as entrepreneurs.
2. To provide students with strong foundational concepts and also advanced techniques and tools in order to enable them to build solutions or systems of varying complexity.
3. To prepare students to critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented methodologies to solve the problems identified.

# **EVENTS OF SEPTEMBER-2024**

- **Alumni Activities**
- **Placement Activities**
- **Industrial Interaction**
- **Professional Society Activities**
- **Entrepreneur Development Cell**
- **Employability Course**
- **NGO Activities**
- **Industrial Visit**
- **Career Guidance Meet**
- **Student Achievements**
- **Staff Achievements**

## ALUMNI ACTIVITIES



**On September 23, 2024, a transformative placement talk titled "Core Dreams to Core Reality" was held, featuring esteemed alumnus Mr. Hariram Kumar S, a SoC Design Engineer at Intel Technology India Pvt. Ltd. His narrative served as an inspiration, urging students to prioritize skill development and industry readiness. He emphasized the significance of possessing a strong foundation in technical knowledge, which he identified as crucial for success in core Electronic and Communication Engineering (ECE) sectors.**

## PLACEMENT ACTIVITIES

### Placement Empowerment Program- Nokia Industry-academia Conclave



**Department of Electronics and Communication Engineering in association with 5G/6G Technology Innovation Centre - Placement Empowerment Program Centre.**

**15 Students and 3 Faculty Members attended Nokia Industry-academia Conclave "FutureX with GenZ" as part of the Engineers Day celebration organized by Nokia Chennai University Collaboration(NCUC) Team on September 18, 2024.**Students attended a Keynote address on "Nokia's Technology Vision" and a panel discussion on "Where are the networks heading?". Student engagements included Lab Visits, Career Mentoring, Virtual Factory Tour, a broad coverage of Nokia Services and Alumni connect.

## PLACEMENT ACTIVITIES

### Placement Empowerment Program 5G/6G Technology Innovation Centre



#### MATLAB Workshop for AI Developers

The Department of Electronics and Communication Engineering, in collaboration with the 5G/6G Technology Innovation Centre - Placement Empowerment Program Centre (PEPC), successfully conducted a workshop on "MATLAB for AI Developers" on September 26, 2024. Mr. S. Afsal, a Senior Application Engineer from ARK Infosolutions Pvt. Ltd., Chennai, led the session, providing participants with a comprehensive introduction to MATLAB and its applications in AI, ML, and DL. The workshop covered topics such as data analysis, modeling, visualization, feature extraction, machine learning model building, deep learning concepts, and webcam object recognition. Participants were also introduced to MATLAB's integration with Python and various learning resources. The workshop concluded with a Q&A session, summarizing the key takeaways and providing participants with valuable insights into MATLAB's potential in their AI development endeavors.

## PLACEMENT ACTIVITIES

### Placement Empowerment Program 5G/6G Technology Innovation Centre



#### 5G & 6G Exploration Toolbox Workshop

The Department of Electronics and Communication Engineering, in partnership with the 5G/6G Technology Innovation Centre - Placement Empowerment Program Centre (PEPC), successfully conducted a two-day workshop on "5G & 6G Exploration Toolbox" for III Year Students from September 27 to 30, 2024. Dr. Vivek Ashokan, Regional Manager from ARK Infosolutions Pvt. Ltd., Chennai, served as the resource person. The workshop provided participants with a deep dive into the 5G Toolbox within MATLAB, covering topics such as waveform generation, channel modeling, beam steering, and map-based visualization. Through practical exercises, attendees gained hands-on experience in creating and analyzing radio waveforms, implementing channel models, understanding beamforming techniques, and visualizing 5G network parameters on maps. This workshop equipped participants with valuable knowledge and skills to explore the exciting world of 5G and 6G technology.

## PLACEMENT ACTIVITIES

### Student Employability Enhancement Research Activities SEERA



SEERA classes focused on preparing students for interviews at Avasoft. Students participated in mock interviews, coding challenges, and resume building workshops. The classes aimed to enhance technical skills, communication abilities, and overall interview readiness. The session was interactive and helped students build confidence in articulating their thoughts during discussions.

## PLACEMENT ACTIVITIES

### Student Employability Enhancement Research Activities SEERA



As part of the SEERA class, placement students received training on group discussions. The session handled by Salomi Margret M by sharing her Avasoft and Accenture Interview Experience and tips . A detailed summary was given on interview approach strategies, preparation techniques for various companies. The exercise aimed to enhance students' communication skills, teamwork, and ability to present their views clearly and confidently in a group setting. This training is a vital component of preparing students for the placement process, where group discussions are a common evaluation method. The session was interactive and helped students build confidence in articulating their thoughts during discussions.

## **PLACEMENT ACTIVITIES**

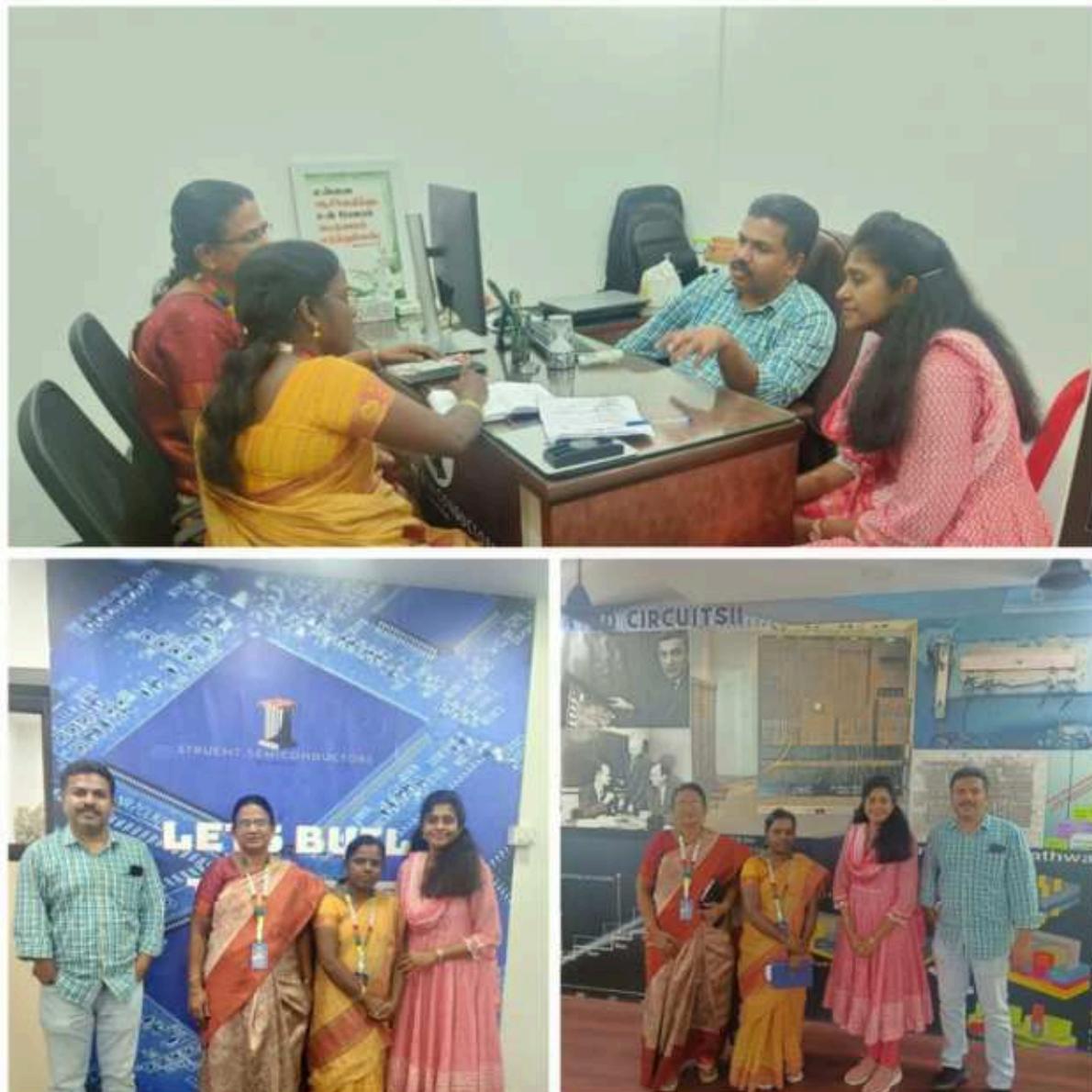
### **Student Employability Enhancement Research Activities SEERA**



The SEERA program focus areas include technical skill development, career strategy sessions, and communication enhancement techniques. Communication workshops aimed at improving students' active listening and nonverbal communication skills. Insights into key industry-relevant skills, along with guidance on presenting these skills to potential employers. Preparatory strategies for competitive exams like GATE 2025 (Graduate Aptitude Test in Engineering), which is essential for students aspiring to pursue higher education or enter public sector undertakings

## INDUSTRY INTERACTION

### Struent Semiconductors Private Limited



**Industry-Academia Collaboration: A Successful Visit to Struent Semiconductors !!!**

ECE Department faculties have visited Struent Semiconductors Private Limited in Chennai was a fruitful endeavor to explore potential collaborations between our institution and the semiconductor industry. They made a Productive discussions with Mr. Hiram Prassanna S, Founder and CEO, and Mrs. Anitha Stalin, Chief Operating Officer, regarding potential partnerships. Key topics included aligning our VLSI Design syllabus with industry needs, offering paid internships and training programs to enhance practical skills, and exploring placement opportunities and a potential Memorandum of Understanding (MoU). This visit marked a significant step towards fostering stronger industry-academia connections and preparing our students for future careers in the semiconductor field.

## Professional Society Activities

### IEEE Students Chapter



The Department of Electronics and Communication Engineering at St. Joseph's College of Engineering, in association with IEEE, organized a seminar titled "Impact of Wide Band Gap Semiconductors on High Frequency Communication Systems". This event aimed to provide valuable insights into the transformative potential of wide band gap (WBG) semiconductors, particularly in the field of high-frequency communication. The session was part of the institution's ongoing effort to expose students to cutting-edge technologies and trends in the electronics and communication domain.

## Professional Society Activities

### IET Student Chapter



#### IET Student Chapter Inauguration and Insightful Talk

**IET Student Chapter on September 27, 2024.** The event featured an insightful talk by Saudamini Dutta, Asst. Manager of Business Development at IET-Bengaluru. Ms. Dutta provided valuable insights into the benefits of joining IET and how it can enhance students' global networking and career growth opportunities.

## Professional Society Activities

### Optica Student Chapter



The Edit Forge Workshop was a comprehensive, hands-on event designed to enhance the video editing skills of 2nd-year ECE students. Over three days, participants were guided by skilled resource persons from the 3rd-year ECE class, who introduced cutting-edge software tools for multimedia editing. The focus was on three key tools: Adobe After Effects for motion graphics and visual effects, CapCut for simple yet powerful mobile video editing, and DaVinci Resolve for professional color grading and editing.

## Professional Society Activities

### Optica Student Chapter



Evoquest an event tailored for second year students of ECE featured a series of engaging rounds designed to assess various communication skills by working on quiz tasks and boosted management skills thereby creating a memorable and enjoyable learning experience

## Professional Society Activities

### IETE- Students Forum



### TechnoCAD: A Circuit Design Competition

The IETE Student Chapter hosted a thrilling circuit design competition, **TechnoCAD**, on September 24, 2024. Held in the ECE lab, the event challenged students to showcase their creativity and technical skills using Tinkercad. Participants were tasked with designing and simulating various circuits, including smoke alarms, LED buzzer interfaces, humidity sensors, traffic lights, LED displays, and circuits of their own choosing. Teams competed against the clock to complete as many circuits as possible, with the winners determined by the number of successfully completed designs. The event was a great opportunity for students to learn and apply their knowledge of circuit design in a fun and competitive environment.

## **Professional Society Activities**

### **IETE- Student Forum - Industrial Visit CSIR-CEERI**



#### **A Deep Dive into Cutting-Edge Research: Exploring CSIR-Madras**

**On September 26, a group of ECE students embarked on an enriching journey to explore the CSIR-Madras complex, delving into the groundbreaking research conducted at CSIO and CEERI labs. At CSIO, they learned about the innovative electrospinning process, a nanotechnology used to create ultra-fine fibers, and the precision of acoustic sensing for various applications. Their visit to CEERI introduced them to the advanced terahertz system, a powerful tool for material characterization and imaging. Moreover, they gained valuable insights into the non-invasive edible oil detection method developed at CEERI, ensuring quality and safety through advanced analysis techniques.**

## Entrepreneur Development Cell



Dr. Nabeel from IITM Research Campus delivered a guest lecture on September 4, 2024 to Second year ECE Students, highlighting the innovative potential of healthcare startups. He emphasized the rapid growth of the sector, driven by technological advancements and personalized healthcare solutions. Dr. Nabeel provided a comprehensive overview of different categories within health startups, including telemedicine, wearable devices, digital therapeutics, and AI-driven diagnostics.

## **Employability Course**

**Tamil Nadu Smart and Advanced Manufacturing Centre of Excellence  
(TANSAM)**

### **Robotics and Automation**



The Department of Electronics and Communication Engineering, in collaboration with the Tamil Nadu Smart and Advanced Manufacturing Centre of Excellence (TANSAM), conducted a Robotics and Automation course for third-year ECE students specializing in Robotics. 47 ECE students participated in the course, which took place from September 13th to 14th, 2024.

## Employability Course

### System Verilog for Verification



The Edveon Expert Team conducted a 5-day intensive training program for ECE Students from September 9 to 13, 2024, focused on equipping students with the essential skills in System Verilog for VLSI chip verification using the QuestaSim EDA tool. This comprehensive course, attended by 47 students from the 3rd and 4th years of their respective programs, provided a deep dive into VLSI chip design, covering its components, architecture, and intricacies. Through hands-on exercises and assessments, participants gained valuable practical knowledge and skills, preparing them for successful careers in the field of VLSI chip design.

## Employability Course

### 5G Deep Dive



The "5G Deep Dive" program, conducted by TelcoLearn from September 9 to 14, 2024, was an intensive course for 39 III Year ECE students at the 5G/6G Technology Innovation Centre. Led by Mr. Sanjay Kumar, with over 20 years of telecom experience, the course covered wireless fundamentals, 2G-4G overviews, 5G evolution, network architecture, NR layers, core networks, Telco Cloud, and hands-on 5G lab setups. Students engaged in practical exercises using MATLAB and srsRAN & Open5GS and underwent six assessments. The program aimed to enhance students' employability in the 5G field.

## Employability Course

### FPGA Prototyping



The workshop on FPGA Prototyping was organized for ECE students, led by Mr. Vinnalan K.A from CoreEL Technologies, Bangalore, on September 5th and 6th, 2024, focused on equipping participants with FPGA development skills using Zedboard and Vivado. Participants delved into the 7-Series architecture, mastered design flow, RTL implementation, hardware debugging, and embedded system design.

## Employability Course

### Data Analytics



**IQMATH's Data Analytics course**, specifically designed for 3rd-year ECE students, aims to equip them with the skills to leverage data for informed decision-making, improved efficiency, and enhanced customer experiences. The course, with 65 participants, covers data analytics fundamentals, enabling students to gain a competitive edge, drive revenue growth, manage risk, foster innovation, reduce costs, and streamline processes. By embracing data analytics, students can unlock new possibilities, drive growth, and stay ahead in today's data-driven business landscape.

## NGO Activities



### A Day of Compassion and Connection

On September 4th, 2024, a group of Second year students embarked on a heartwarming journey to the New Hope and New Life Trust - Children Home in Perumbakkam. The day was filled with laughter, learning, and a deep sense of connection as we interacted with the children who call this home. The day was a testament to the positive impact this NGO has on the lives of the children it serves.

## Industrial Visit

### Air Traffic Management and Airport Authority of India



Our II Year ECE students had the opportunity to embark on an enriching industrial visit to the Air Traffic Management (ATM) and Communication Navigation Surveillance (CNS) facilities, as well as the Airport Authority of India (AAI). This visit provided invaluable insights into the intricate workings of air traffic management, including the advanced technologies used to ensure safe and efficient air travel. Students gained a deeper understanding of safety protocols, regulatory compliance, and potential career paths within the aviation sector. The visit also offered valuable networking opportunities with industry professionals.

## Industrial Visit

### Tamil Nadu Smart and Advanced Manufacturing Centre of Excellence (TANSAM)



#### A Glimpse into the Future of Manufacturing: A Visit to TANSAM

A group of students from the department of ECE visited TANSAM on September 26, 2024. It was an eye-opening experience that provided invaluable insights into the cutting-edge technologies shaping the future of manufacturing. From AR/VR to machine learning and Industry 4.0, students gained a comprehensive understanding of how these advancements are transforming industries. The live demonstrations of metal 3D printing and the basics of electric vehicles further enriched our learning. This visit equipped them with practical knowledge that will complement our academic pursuits.

## **CARRIER GUIDANCE MEET**



**On September 18th and 23rd, the Department of ECE hosted a career guidance meeting for parents of our students. The event provided an opportunity for parents to gain insights into the various career opportunities available to their children and learn about the comprehensive career training programs we offer. Through interactive discussions and presentations, parents were able to understand the department's commitment to nurturing their children's academic and professional growth.**

## STUDENT ACHIEVEMENTS

### Internship at MANTISWAVE- IIT Roorkee



Benie Jaison, a final-year ECE student, has landed a prestigious internship at MANTISWAVE, a leading 5G network developer. As part of the internship, Benie will be collaborating with talented IITians at IIT Roorkee, providing him with a unique chance to learn from industry experts and network with like-minded individuals. With a generous stipend of Rs. 20,000 per month, Benie is well-supported to focus on his internship and make the most of this experience and for his future career in the telecommunications industry.

## STUDENT ACHIEVEMENTS

### Runner-up in the Toastmasters International Speech Contest



Charan Velavan, a final-year Electronics and Communications Engineering student, has achieved an impressive **second-place finish in the Speech Contest hosted by Toastmasters International**. This global organization, renowned for its commitment to public speaking and leadership development, challenges its members to hone their communication skills through structured programs and competitions. Charan's success is a testament to his dedication and talent, as he competed against fellow Toastmasters from various backgrounds and experience levels.

## Students Achievements



**NPTEL High Achievers:** Twenty-eight second-year ECE students were honored for their outstanding performance on NPTEL courses. Each student received a reward of Rs. 2000 in recognition of their academic excellence and dedication to online learning.

## **Students Achievements**

**The following students from ECE Department won competition conducted in various Engineering colleges.**

S. NO.	NAME	YEAR	NAME OF THE EVENT	ORGANIZED BY	POSITION
1.	BHARATH KUMAR S	III	ELECTRO HEIST	SRI SAI RAM INSTITUTE OF TECHNOLOGY	III
2.	RAJAPRIYADHARSHINI B	III	ELECTRO HEIST	SRI SAI RAM INSTITUTE OF TECHNOLOGY	III
3.	SHIVANI S	III	ELECTRO HEIST	SRI SAI RAM INSTITUTE OF TECHNOLOGY	III

## **STAFF ACHIEVEMENTS**

### **PATENTS PUBLISHED**

- 1.Dr. B. Victoria Jancee, published a patent tilted “IOT-enabled smart city traffic management system”.**
- 2.Mr. G D Vignesh, published a patent tilted “IOT enabled edge computing system for smart agriculture applications”.**
- 3.Dr.R.Niruban published a patent tilted “Encrypted Federated Learning Framework for Collaborative Model Training with Privacy Guarantees”**

## **STAFF ACHIEVEMENTS**

### **PUBLICATIONS**

- 1.Dr.D. Lakshmi, published a journal titled "Hybrid model-based early diagnosis of esophageal disorders using convolutional neural network and refined logistic regression" in EURASIP Journal on Image and Video Processing.**
  
- 2.Elaveni Palanivel, Shirley Selvan, published a journal titled “Unsupervised Multispectral Gaussian Mixture Model-Based Framework for Road Extraction” J Indian Soc Remote Sens (2024).  
<https://doi.org/10.1007/s12524-024-01972-5>**

### **FDP ATTENDED**

- 1. Dr. D. Sumithra Sofia attended FDP on “Recent Advances Trends and Challenges in Material Characterization and Technique” from 9th to 14th September 2024 at koneru Lakshmaiah Education Foundation, India.**

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**Editorial: *Mrs. M. Angelin Ponrani (AP/ECE)***

**Reviewed by: *Dr. S. Rajeshkannan (HOD/ECE)***

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