ONLINE
FACULTY DEVELOPMENT PROGRAMME (FDP)
"Emerging Frontiers in VLSI Design: Semiconductor Devices, Smart Sensors and Quantum Technologies"
(29th June to 9th July 2026)
Organized by
Electronics & ICT Academy, NIT Warangal
In Association With
Dept. of ECE, Koneru Lakshmaiah Education Foundation (KLEF), Vaddeswaram, Guntur (Dist), A.P.
Sponsored by
Ministry of Electronics and Information Technology (MeitY), GoI

Preamble:

"Electronics & ICT Academy – Phase II" was set up at NIT Warangal with financial assistance from MeitY, GoI. This academy's role is to offer Faculty Development Programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry, CEP for working professionals, advice and support for technical incubation and entrepreneurial activities.

About the FDP:

In line with the vision of a self-reliant and Viksit Bharat, this Faculty Development Program (FDP) is designed to empower faculty members, researchers, and industry professionals with the knowledge, tools, and insights needed to stay at the forefront of this revolution. This FDP delves deep into the advanced landscape of VLSI design methodologies, exploring the latest developments in semiconductor device physics, fabrication technologies, and design architectures that are redefining the boundaries of integrated circuit engineering. Participants will gain comprehensive insights into smart sensor technologies, including MEMS, biosensors, IoT-integrated sensing platforms, and AI-driven signal processing, which are increasingly embedded in healthcare, industrial automation, and consumer electronics. The program further ventures into the realm of quantum technologies, introducing participants to quantum computing principles, quantum communication, and their potential impact on future VLSI and semiconductor paradigms.

Major Course Content:

- Semiconductor Fabrication Technologies: Current Trends and Future Directions
- Reliability, Failure Analysis, and Characterization Techniques of Semiconductor Devices
- System-on-Chip (SoC) Architecture and Design Strategies
- Low Power VLSI Design Techniques: Clock Gating, Power Gating, and DVFS
- Fundamentals of Smart Sensors and Transducer Technologies
- MEMS Design, Fabrication, and Applications
- Biosensors and Lab-on-Chip Technologies for Healthcare Applications.
- Fundamentals of Quantum Mechanics for Engineers
- Quantum Computing: Qubits, Quantum Gates, and Quantum Circuits
- Industry 4.0 and the Role of VLSI, Sensors, and Quantum Technologies

Experts/Speakers:

Resource persons will be from IITs, NITs, industry, and foreign universities.

Registration Fees:

Registration fees for the FDP, inclusive of GST, are:

Faculty/Research Scholars	**Rs. 500/-**
Industry Participants	**Rs. 750/-**

Participants need to pay the Registration Fee Online using the following details:

Account Name: Koneru Lakshmaiah Education Foundation
Account No: 62162871052
IFSC: SBIN0021361
Bank and Branch: State Bank of India, Vaddeswaram, Guntur

How to Apply:

Participants are required to fill out the online registration form by clicking on the following link:

https://forms.gle/8JrB1BxhL4cLdUYv5

Selection Criteria:

Selection will be made on a first-come, first-served basis to a maximum of 40 participants. Candidates will be issued satisfactory certificates on successful completion of the course.

Important Dates:

Last date of Application	**18th June 2026**
Selection Notification	**20th June 2026**

About Koneru Lakshmaiah Education Foundation (KLEF):

Koneru Lakshmaiah Education Foundation (KLEF), recognized as a premier institution in India, is dedicated to setting benchmarks in education, research, and innovation. As a Category 1 University, conferred by the University Grants Commission (UGC), KLEF ranks among the top 30 institutions in India, securing the 22nd position in the NIRF Rankings 2024. And certified as an ISO 21001:2018 institution, KLEF is celebrated for its unwavering commitment to academic excellence, research advancements, and societal contributions. Spread across a sprawling 100-acre eco-friendly main campus and a 27.9-acre off-campus site in Hyderabad, the university boasts over 60 lakh square feet of built-up area, featuring GRIHA 5-Star-certified green buildings. The university's infrastructure supports transformative learning with 100% smart classrooms, 344 academic and 25 research laboratories, 32 Industry-Skill Development Centres, and 4 Centres of Excellence. A robust 21 Gbps high-speed internet connection ensures seamless connectivity across academic spaces and hostels.

About the ECE Department, KLEF:

The Department of Electronics and Communication Engineering (ECE) at this institution, established in 1983, stands as a pillar of technical excellence with over four decades of transformative education. Guided by a contemporary, industry-ready curriculum and deeply rooted in industry-connect academic programs, the department continuously evolves to meet the dynamic demands of the electronics and communication landscape. One of its most celebrated achievements is its unblemished record of 100% placements for eligible and registered students spanning the past 16 years, a testament to the trust that leading industries place in its graduates.

About NIT Warangal:

National Institute of Technology, Warangal, is the first among 17 RECs set up as a joint venture of the Government of India and the state government. Over the years, the college has established itself as a premier Institute, imparting technical education of a very high standard, leading to B. Tech degrees in various branches of engineering, M. Tech., and Ph. D. Programmes in various specializations. For more details about NITW, explore www.nitw.ac.in

About EED NIT Warangal:

The Department of Electrical Engineering, NITW, was established in 1959. The department has been actively engaged in teaching and research in diverse fields of Electrical Engineering with excellent faculty. The department offers an Undergraduate Programme in Electrical and Electronics Engineering and Post Graduate Programmes in "Power Electronics & Drives", "Power Systems Engineering", "Smart Electric Grid", "Control & Automation", and offers Ph.D. Programme in Electrical Engineering. The department has well-equipped state-of-the-art laboratories and a dynamic group of faculty with profound experience in academics, research, and industry collaboration.

Course Coordinators:

Dr. Chella Santhosh, Associate Professor, ECE, KLEF, A.P.

Dr. Y. ShantiKumar Singh, Assistant Professor, ECE, KLEF, A.P.

Dr. Shagolsem Romeo Meitei, Assistant Professor, ECE, NIT Andhra Pradesh

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Proposed Speakers:

Dr. Rajeev Kumar Ranjan	IIT (ISM) Dhanbad
Dr. Santosh Kumar	Koneru Lakshmaiah Education Foundation, A.P.
Dr. Ashish Ranjan	NIT Manipur
Dr. Stacy A Lynrah	NIT Calicut
Dr. Ahna Sharan	NIT Andhra Pradesh
Dr. Suryansh Dongre	NIT Andhra Pradesh
Dr. Biraj Shougaijam	Manipur Technical University
Dr. Naorem Khelchand Singh	NIT Nagaland
Dr. Huidrom Hemojit Singh	Guwahati University
Dr. Rajshree Rajkumari	NIT Surathkal
Dr. Mourina Ghosh	IIIT Guwahati
Dr. Sanjeev Kumar Raghuwanshi	IIT (ISM) Dhanbad
Dr. Sourabh Pandey	IIT Patna
Dr. Ajay Yadav	Bennett University
Dr. Sumit Saha	NIT Rourkela
Dr. Narayan Sahoo	Berhampur University
Dr. Nityanandan Kanagaraj	IIT Hyderabad
Dr. Nalini Vidhyulatha	Scientist "F", RCI, DRDO Hyderabad
Dr. Subrahmanyam Perumalla	Sr. Silicon Design Engineer, AMD, Bangalore
Dr. Shruti Konwar	Sr. Silicon Design Engineer, AMD, Bangalore

REFERRED BY KLEF

Proposed Resource Persons from Industry

Speaker	**Topics interested**
Dr. Subrahmanyam Perumalla (PhD, IIT Kharagpur) Sr. Silicon Design Engineer, AMD, Bangalore	Advanced Design Strategies for Circuit Analysis and Front-End Sensing Systems.
Dr. Shruti Konwar (PhD, IIT Kharagpur) Sr. Silicon Design Engineer, AMD, Bangalore	Design Challenges in sub-5nm technologies for Advanced Analog Designs.