



## Events organized in the department

### 6-Days AICTE sponsored FDP on NOVEL MATERIALS, DEVICES AND APPLICATIONS

VLSI 6-Days AICTE sponsored FDP was organized by Dept of ECE from 11th to 16th December 2023 in which around 40 participants from different parts of the country participated.



The faculty coordinator of the FDP, Dr. Anirudh Bahadur Yadav addressed the participants and Electronics and Communication Department HOD DR. D. Venkata Rao delivered his key note address. The esteemed speaker, Dr. Mrinmoy De, commenced an enlightening lecture on "Engineered Nanomaterials: Array-Based Sensing of Biological and Chemical Analytes". His approachable demeanor created an engaging atmosphere, making the session not just informative but also interactive.



The second day of the Faculty Development Program (FDP) kicked off with a presentation by Dr. Akash Ranjan on the topic Biomolecules: Computer Simulations and Interaction Studies Using Biosensors. He delved into the world of Biomolecules, focusing on how computer simulations and interaction studies play a crucial role in understanding these tiny building blocks of life, especially when using biosensors.



Dr. Apurbha Laha took the stage to enlighten the audience on the topic III-Nitride Nano-Optoelectronics: Leveraging the unexplored potentials of Quantum nature of III- Nitride Semiconductors. The session is driven by the speaker's vibrant presentation style and participants' active involvement



The third day commenced with a highly captivating lecture by Dr. S. Ramprabhu, on the topic Advanced Carbon Nanomaterials, Proton Exchange Membrane Fuel Cell, Hydrogen from Seawater & Next Generation Batteries. The session was very interesting. Dr. Ramprabhu's expertise and the intriguing nature of the topics discussed contributed to a truly enriching start to the day.

The following day, the session kicked off with Dr. Pramod Kumar Tiwari, who engaged the audience with a presentation on the intriguing subject of Fabrication, Simulation, and Modeling of Nanowire Gate-All- Around (GAA) MOSFETs. Dr. Tiwari's adept presentation style, coupled with the intriguing subject matter, contributed to a session that was both engaging and highly commendable.



The fifth day of the Faculty Development Program became exceptionally enriching and enjoyable, thanks to an industry visit to CIPET (Central Institute of Plastics Engineering & Technology). The experience was not only very nice but also proved to be a valuable and insightful opportunity for the participants. The firsthand exposure to industry practices added a practical dimension to the academic knowledge. It is a memorable and good experience for everyone involved.



Industry experts explaining the process of plastic manufacturing.



At CIPET  
(Central Institute of Plastics Engineering & Technology)

Dr. Ball Mukund Tripathi delivered a captivating lecture on Negative Capacitance and Future Computing Technology. The session was highly interesting and with active participation of the participants it became interactive and engaging.



On the final day, Dr. N. N. Murthy commenced the morning session with his enlightening lecture on an intriguing topic exuding a vibrant energy, fostering a highly interactive and engaging atmosphere.



After the captivating presentation, the audience actively participated in multiple-choice questions (MCQs), sharing their insights during feedback sessions, and engaging in fruitful discussions. The dynamic exchange of ideas added an extra layer of richness to the entire experience. This collaborative learning environment not only enhanced the understanding of the subject matter but also created a sense of fellowship among the participants. The event culminated on a high note with a valedictory session, providing an opportunity to reflect on the knowledge gained and celebrate the successful completion of the program.

## Three Days National Level workshop on "The Next Generation VLSI and MEMS Devices in Medicine"

Three Days National Level workshop on "The Next Generation VLSI and MEMS Devices in Medicine" was organized in Dept of ECE from 20th to 22nd Dec 2023. This workshop provided a forum to explore the latest developments and trends in Very Large-Scale Integration (VLSI) and Microelectromechanical Systems (MEMS) devices, with a particular focus on their customized applications in the medical field. By investigating the convergence of electronics and healthcare, this event advanced the forefront of research, fostering the creation of compact, intelligent, and exceptionally efficient medical devices. Kidney Importance in Human Body, Drug induced Nephrotoxicity & its eradication, MEMS and Bio-MEMS, Microfluidics in Medical Equipment, Fabrication Aspects of Microfluidics, Applications and Future Scope of MEMS in Medical Diagnostics, Artificial Intelligence were the topics covered. Participants had the opportunity to gain knowledge, share insights, and collaborate with experts, researchers, and industry professionals from diverse backgrounds, fostering interdisciplinary approaches to tackle healthcare challenges. By staying abreast of the latest research and developments in this area, attendees can contribute to creating advanced medical devices that cater to the evolving needs of patients and healthcare providers. Moreover, this workshop served as a bridge between academia and industry, encouraging collaborations and partnerships, ultimately leading to the development of commercialized medical devices and technologies. By participating in this workshop, individuals enhanced their skills, broaden their knowledge, and improve their career prospects in VLSI and MEMS devices in medicine.



The exploration of the next generation VLSI and MEMS Devices in medicine is attracting and creating interest as experts are delving into advancements as stated by Prof. Prem Pal, MEMS and Micro/Nano Systems Laboratory, Dept. of physics, IIT Hyderabad, while addressing the gathering in the inaugural event of a three-day National Workshop.

Wireless Body Area Networks in Biomedical Applications by Dr. Kiran Kumar Gurrula, Assistant Professor, NIT AP.



Objectives, Solutions and Challenges in Pulmonary Disease Diagnosis were the topics explained by Dr. R. Periya Samy, Assistant Professor, NIT Trichy. Dr. Subrahmanyam Gorthi, Assistant Professor, IIT Tirupathi explained the detailed overview of Machine Learning in Medical Imaging



Online talk was delivered on “Research in Microfluidics & MEMS based Bio/Chemical Sensing Systems Devices” by Dr. Sohan Dudala, Bio-MEMS & Microfluidics Innovator, Director, Cleome Innovations, BITS Pilani, Hyderabad.

Role of Technology in Medicine- Is it HYPE or HOPE was elucidated by Dr. U.K. Rakesh, Associate Professor, General Medicine, AIIMS Mangalagiri.



Faculty members, research experts, and students who attended this workshop gained knowledge on MEMS Technology, WBAN in Bio-medical Applications, Intelligent System based on lung sound analysis for Pulmonary Disease Diagnosis, ML in Medical Imaging, Microfluidic Devices, Technology in Neurosurgery. This workshop provided an excellent platform for industry professionals, researchers, faculty members and students to interact and share ideas on MEMS technology and its emerging Applications in medicine.

## FDps/Workshops/Guest lecture attended by faculty

- Mrs. Vanka Saritha, participated in SERB sponsored three days National Workshop on “The Next Generation VLSI & MEMS Devices in Medicine” from 20-12-2023 to 22-12-2023 organized by ECE department, VR Siddhartha Engineering College.
- Mrs. M. Sunitha attended 3rd International Research Workshop on Advances in Deep Learning and Applications (WADLA-2023) from 11-12-2023 to 16-12-2023, organized by Indian Institute of Information Technology, Sri City, Chittoor.
- Mr. G Venkata Subbaiah Participated in SERB sponsored three days National Workshop on “The Next Generation VLSI & MEMS Devices in Medicine” from 20-12-2023 to 22-12-2023 organized by ECE department, VR Siddhartha Engineering College.
- Mrs. V B K L Aruna participated in SERB sponsored three days National Workshop on “The Next Generation VLSI & MEMS Devices in Medicine” from 20-12-2023 to 22-12-2023 organized by ECE department, VR Siddhartha Engineering College.
- Dr. K V Prasad, participated in SERB sponsored three days National Workshop on “The Next Generation VLSI & MEMS Devices in Medicine” from 20-12-2023 to 22-12-2023 organized by ECE department, VR Siddhartha Engineering College.

## Publications

- N Satyanarayana Murthy & Shaik Fayaz Ahamed (2023) Water quality monitoring and measuring physicochemical parameters using wireless sensor networks, African Journal of Aquatic Science, 48:4, 366-373, DOI: 10.2989/16085914.2023.2277955
- Hareesha, D. Shaik Fayaz Ahamed et al. ‘A Novel Multi-Level Clustering Mechanism Using Heuristic Approach for Secure Data Transmission in WSN Sector with Various Trust Computation’. 1 DOI: 10.3233/IDT-220314, Journal: Intelligent Decision Technologies, vol. 17, no. 4, pp. 1417-1433, 2023 Published: 20 November 2023
- P Jaswanth Sai, Dheeraj, Harisha, and K Venu of III/IV B. Tech- Sec D has got selected for the project design contest of “FPGA Grand Challenge-IEEE Asia Pacific Conference on Circuits and Systems (APCCAS 2023), IIT Hyderabad held from 19<sup>th</sup> to 22<sup>nd</sup> Nov 2023.

Mentor Names: Dr G Kishore Kumar & Mrs. V B K L Aruna. Assistant Professor



## Industrial visit to Efftronics

VR Siddhartha Engineering College, ECE department deputed Two faculty Mr. R.V. Hanuman Prasad and Mrs. M. Sunitha accompanied 20 third year students for an industrial visit at EFFTRONICS PVT. LTD at Mangalagiri, Andhra Pradesh, on 24-11-2023 from 2.00pm to 5. 00 pm. Students exposed to perceive the PCB designing and layout printing. At the Research and Development centre, project heads explained the Automated Density Based Traffic Light System, Smart Indoor lightening system and Smart Signalling System for Railways. Students are enlightened in contemporary technologies and willing to do projects in those technologies.



# Department of ECE

## Vision

To produce globally competitive and socially sensitized engineering graduates and to bring out quality research in the frontier areas of Electronics & Communication Engineering.

## Mission

To provide quality and contemporary education in the domain of Electronics & Communication Engineering through periodically updated curriculum, best of breed laboratory facilities, collaborative ventures with the industries and effective teaching learning process.

To pursue research and new technologies in Electronics & Communication Engineering and related disciplines in order to serve the needs of the society, industry, government and scientific community.

## PSOs

PSO1 Demonstrate proficiency in design, development and implementation of application oriented engineering systems using VLSI and IOT

PSO2 Implement functional blocks of hardware / software designs for signal processing and communication applications

## POs

- PO1 → Engineering knowledge
- PO2 → Problem analysis
- PO3 → Design/development of solutions
- PO4 → Conduct investigations of complex problems
- PO5 → Modern tool usage
- PO6 → The engineer and society
- PO7 → Environment and sustainability
- PO8 → Ethics
- PO9 → Individual and team work
- PO10 → Communication
- PO11 → Project management and finance
- PO12 → Life-long learning

V R Siddhartha engineering College

Department of ECE

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