	Faculty Development Program	

Title : Advances in biomedical, healthcare sensors and nanoscale devices

Date : 2025-01-27 - 2025-01-31
Time : 10:00 - 17:30
Venue : TT128

Event Outcome

- Enhanced Knowledge and Skills: Faculty members will gain a deeper understanding of cutting-edge technologies in healthcare and their applications. This knowledge will empower them to incorporate these concepts into their teaching, making their courses more relevant and engaging.

- Improved Teaching Methods: The FDP can inspire faculty to adopt innovative teaching methods, such as problem-based learning, project-based learning, and hands-on experiments, to make learning more interactive and student-centered.

- Fostering Interdisciplinary Collaboration: The diverse range of topics covered in the FDP can encourage faculty from different disciplines to collaborate on research projects and develop interdisciplinary courses.

- Mentorship and Networking: The program can create opportunities for faculty to connect with experts in the field, establish mentorship relationships, and expand their professional networks.

- Collaboration and Partnerships: The program can foster collaborations between faculty and industry partners, leading to joint research projects and technology transfer.

	Resource Person 1 - Details **Name :** Dr Gunasekaran Thangavel **Designation :** Senior Lecturer , Engineering Department EEE Section **University/ Company :** University of Technology and Applied Sciences, Muscat **Address :** Sultanate of Oman, 133.
	Resource Person 2 - Details **Name :** Dr Malaya Kumar Nath **Designation :** Assistant Professor, Department of ECE **University/ Company :** NIT Puducherry, Karaikal **Address :** India, 609609.
	Resource Person 3 - Details **Name :** Dr Vijayakumar P **Designation :** Professor, School of Electronics Engineering **University/ Company :** Vellore Institute of Technology Chennai, Chennai **Address :** India, 600127.
	Resource Person 4 - Details **Name :** Dr VPS Naidu **Designation :** Chief Scientist and Professor AcSIR, Multi Sensor Data Fusion Lab **University/ Company :** National Aerospace Laboratories , Bengaluru **Address :** India, 560017.
	Resource Person 5 - Details **Name :** Mahalakshmi P **Designation :** Professor Grade 2, School of Electrical Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.
	Resource Person 6 - Details **Name :** Vidhya S **Designation :** Professor Grade 1, School of Electronics Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.
	Resource Person 7 - Details **Name :** Dr ASHIS TRIPATHY **Designation :** Associate Professor , School of Electronics Engineering **University/ Company :** VIT Chennai Campus, Chennai **Address :** India, 600127.
	Resource Person 8 - Details **Name :** Valarmathi J **Designation :** Professor Higher Academic Grade, School of Electronics Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.

	Resource Person 9 - Details **Name :** Dr R Dinesh **Designation :** Assistant Professor, Computer Science and Engineering **University/ Company :** Indian Institute of Information Technology Design and Manufacturing, Kancheepuram Chennai **Address :** India, 600127.
	Resource Person 10 - Details **Name :** Dr Kannadasan K **Designation :** Assistant Professor, Department of Computer Science and Engineering **University/ Company :** Indian Institute of Information Technology Design and Manufacturing, Kancheepuram Chennai **Address :** India, 600127.
	Resource Person 11 - Details **Name :** Dr Swapnil S Bhuktare **Designation :** Associate Professor, Department of Electrical Engineering **University/ Company :** IIT Tirupati, Tirupati **Address :** India, 517619.
	Resource Person 12 - Details **Name :** Kathirvelan J **Designation :** Professor Grade 1, School of Electronics Engineering **University/ Company :** VIT, Vellore **Address :** India, 632014.
	Resource Person 13 - Details **Name :** Samuel Tensingh **Designation :** Associate Lecturer, School of Biomedical Engineering **University/ Company :** University of Sydney, Australia **Address :** Australia, 062284.

Resource Person's Profile :

1. Profile of Dr Gunasekaran Thangavel

Dr Gunasekaran Thangavel

2. Profile of Dr Malaya Kumar Nath

Dr Malaya Kumar Nath

3. Profile of Dr Vijayakumar P

Dr P Vijayakumar is currently working as a Professor in the School of Electronics Engineering at Vellore Institute of Technology Chennai, Tamilnadu India and completed his PhD in Wireless Communication and Network Security at Pondicherry University Pondicherry in 2015. He completed his BTech at Rajiv Gandhi College of Engineering and Technology, Puducherry in 2004 and his MTech in Pondicherry Engineering College, Pondicherry in 2006. He has a total of 17 years of teaching and research

4. Profile of Dr VPS Naidu

Digital signal and image processing, Sensor data analysis, Medical electronics

5. Profile of Mahalakshmi P

Dr. P. MAHALAKSHMI is a Professor in the Department of Instrumentation, School of Electrical Engineering at Vellore Institute of Technology, Vellore, Tamil Nadu, India. She did her Bachelors in Electronics and Communication Engineering from Bharathiar University, M.Tech., and Ph.D in Biomedical Engineering from Indian Institute of Technology Madras, Chennai, India. Her research interests include Signal and Image processing, Artificial Intelligence, Machine Learning and Deep Learning.

6. Profile of Vidhya S

Professor and Head

Dept. of Sensors and Biomedical Technology, School of Electronics Engineering VIT University, Vellore, Tamil Nadu, India

Ph.D. in Biomedical Engineering, VIT University, Vellore, 2018

M.E. in Electronics and Control, Sathyabama University, Chennai, 2007

B.E. in Biomedical Instrumentation Engineering, Avinashilingam Institute of Technology, Coimbatore, 2002

7. Profile of Dr ASHIS TRIPATHY

Dr. Ashis Tripathy received his B.Tech. degree in Electronics and Instrumentation Engineering from Biju Patnaik University of Technology, Odisha, India, and M.Tech. degree in Electronics and Instrumentation Engg. from the Jadavpur University, Kolkata. He obtained his Ph.D. degree in Biomedical Engineering from the University of Malaya (QS Ranking-65), Kuala Lumpur, Malaysia with the honor of Award of Excellence. He worked as a Postdoctoral research fellow at the University of Minho, Portugal

8. Profile of Valarmathi J

Dr. J. Kathirvelan

9. Profile of Dr R Dinesh

Dr. R. Dinesh

Computer Science and Engineering, Indian Institute of Information Technology, Design and Manufacturing -Kancheepuram, Chennai, Tamil Nadu, India

10. Profile of Dr Kannadasan K

Dr Kannadasan K

Department of Computer Science and Engineering,

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram -600127

11. Profile of Dr Swapnil S Bhuktare

Dr. Swapnil S Bhuktare

Department of Electrical Engineering

IIT Tirupathi - 517619

12. Profile of Kathirvelan J

Dr. J. Kathirvelan

13. Profile of Samuel Tensingh

Samuel Tensingh is an Associate Lecturer at the School of Biomedical Engineering at the University of Sydney, Australia. He has 14 years of experience designing Digital Integrated Circuits for Avago Technologies, Broadcom Limited, and ST Microelectronics in Singapore, where he worked as a Senior Physical Design Engineer. He has multiple certifications from Cadence Design Systems. His experience is mainly in RTL-GDS Implementation, delivering numerous ASIC designs in his career.

Samuel holds a

This Faculty Development Program (FDP) is designed to delve into the intersection of cutting-edge technologies and healthcare, focusing on key areas that align with Sustainable Development Goals (SDGs). The program aims to equip participants with the knowledge and skills necessary to drive innovation and research in these domains.

Advanced Sensors and Devices for Healthcare: The program will explore the application of advanced sensors and devices in healthcare. Participants will gain insights into the development and utilization of wearable sensors for continuous health monitoring, implantable devices for therapeutic interventions, and point-of-care diagnostic tools. By leveraging these technologies, we can improve patient care, early disease detection, and personalized medicine.

AI and ML in Biomedical Signal Processing: Artificial intelligence (AI) and machine learning (ML) have revolutionized biomedical signal processing. This FDP will delve into the application of these techniques for analyzing complex biological signals such as electrocardiograms (ECGs), electroencephalograms (EEGs), and electromyograms (EMGs). Participants will learn how to extract meaningful information from these signals to diagnose diseases, monitor patient conditions, and develop innovative healthcare solutions.

Biosensors: Introduction and Fabrication: Biosensors, devices that convert biological signals into measurable electrical signals, play a crucial role in healthcare. This FDP will introduce participants to the fundamental principles of biosensor design and fabrication. They will gain hands-on experience in developing biosensors for various applications, including glucose monitoring, cancer detection, and environmental monitoring.

Next-Generation Nanoscale Devices: The program will explore the exciting field of nanoscale devices, including memristors, resistive switching devices, single-electron transistors, and plasmonic devices. Particip

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MATLAB, LABVIEW

Coordinator's: **Prof. MAHALAKSHMI P 10116 - Professor Grade 2 - SELECT**
                Prof. UMA SATHYAKAM P 13570 - Associate Professor Grade 2 - SELECT