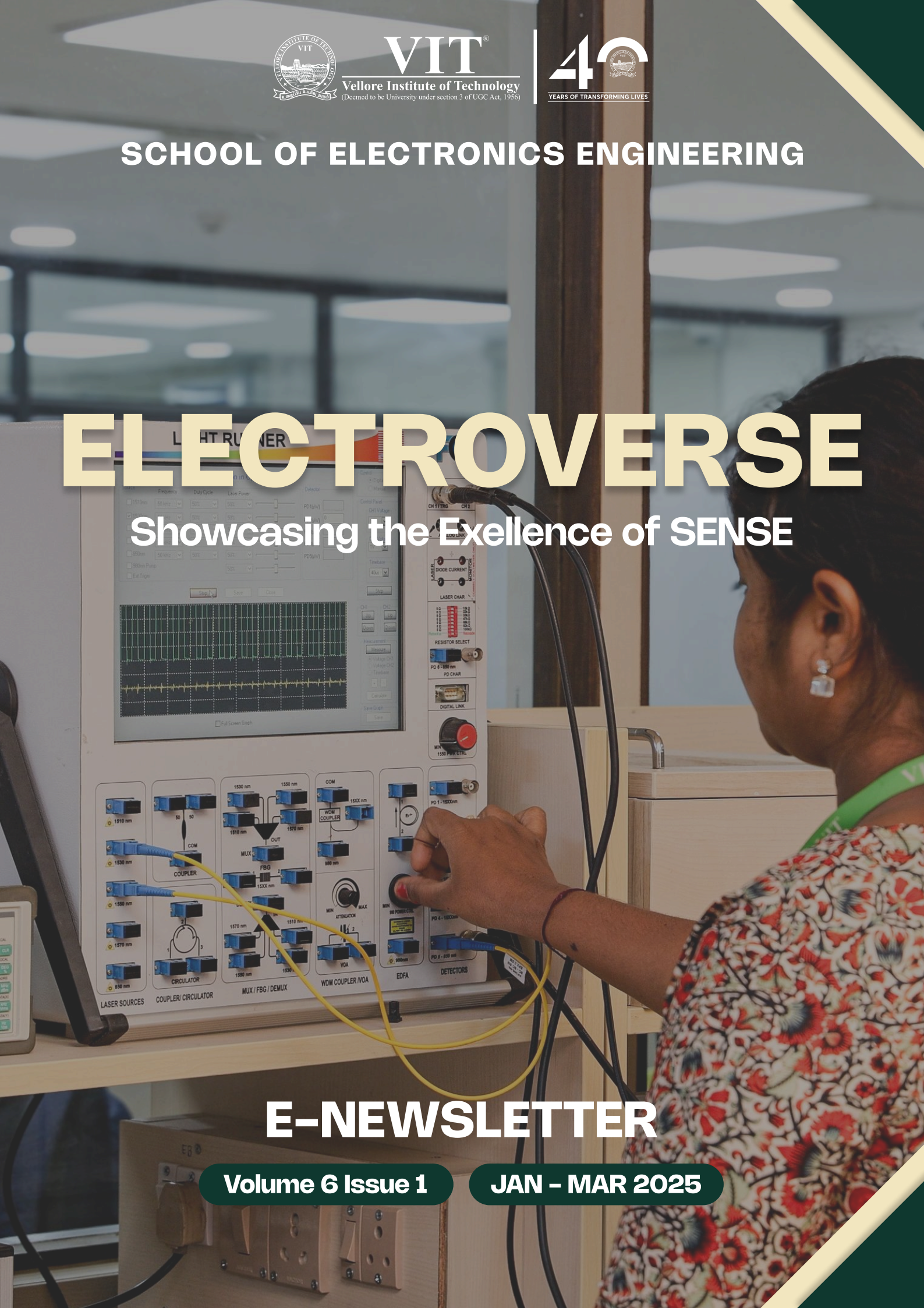
VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

40 YEARS OF TRANSFORMING LIVES

SCHOOL OF ELECTRONICS ENGINEERING

ELECTROVERSE

Showcasing the Exellence of SENSE



E-NEWSLETTER

Volume 6 Issue 1 JAN - MAR 2025

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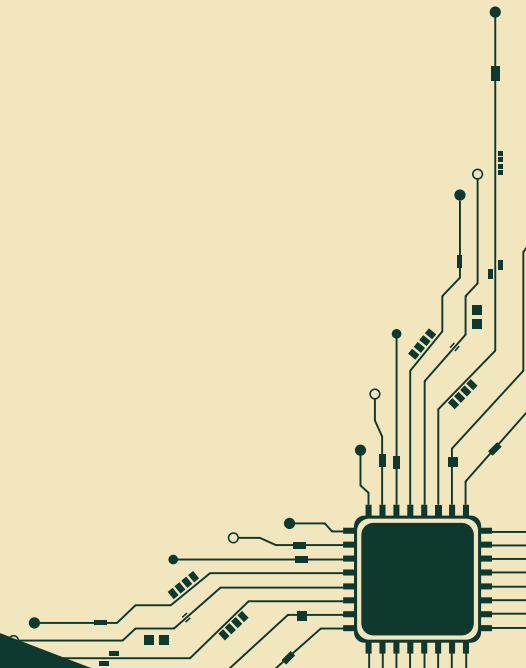
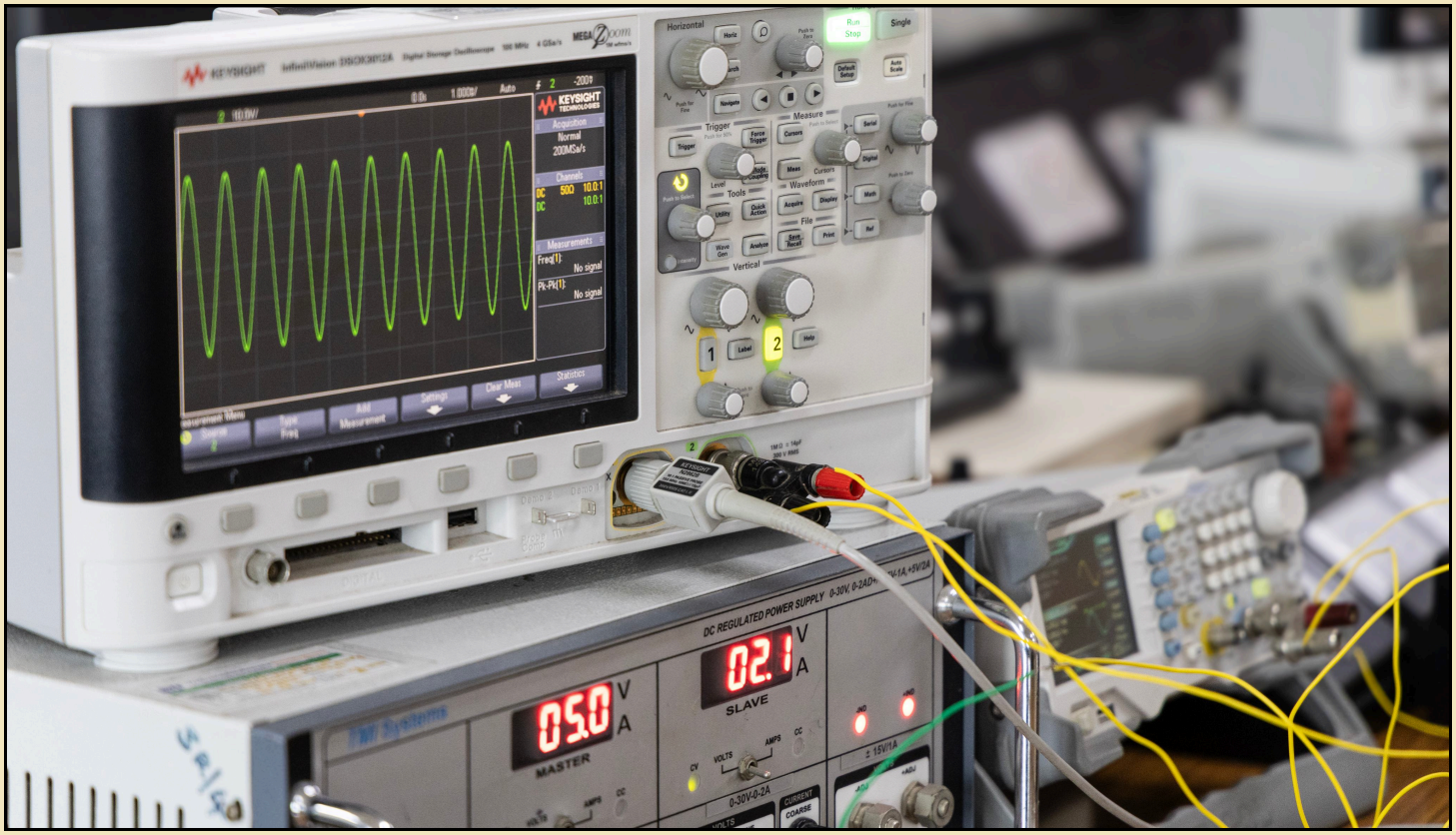


ABOUT 01



Vision

To be a leader in imparting in-depth and futuristic knowledge of electronics engineering and allied domains that cater to the needs of industry, research, and society.

Mission

- To create and maintain an environment of excellence in teaching, learning, and applied research in electronics engineering and associated disciplines to pioneer sustainable growth.
- To equip students with the necessary knowledge and skills enabling them to be lifelong learners in solving real-life problems, thereby improving the quality of human life and values.

02 DEAN'S MESSAGE

Dear VITians,

I hope this message finds you well and energized.

It is with great enthusiasm that I reach out to you as the newly appointed Dean of the School of Electronics Engineering (SENSE). Stepping into this role, I am filled with optimism for the future we will build together.

Recognizing the rapid advancements shaping the field of electronics engineering, SENSE is undergoing an exciting phase of transformation. We are currently revisiting our curriculum to ensure that our academic programs are not only aligned with industry trends but also future-ready. Students can look forward to refreshed course structures, upgraded laboratories with state-of-the-art equipment, and enhanced project-based learning modules that nurture creativity and technical excellence.

Our commitment to research and innovation remains stronger than ever. We have initiated new collaborations with industry leaders and secured additional funding to support breakthrough research. These efforts will empower both students and faculty to work on multidisciplinary projects that address real-world problems and contribute to technological progress.

To bridge the gap between the classroom and the corporate world, we are forging partnerships with top technology companies. Through internships, training programs, live projects, and expert guest sessions, students will have increased opportunities to engage directly with the industry and develop practical insights essential for their career journeys.

It also gives me immense pleasure to present the 6th Volume, 1st Issue of Electroverse: Showcasing the Excellence of SENSE — the official e-Newsletter of SENSE for the first quarter of 2025. This issue celebrates the remarkable achievements of our faculty and students during January to March 2025.

I extend my sincere thanks to everyone in the SENSE community for your unwavering commitment, passion, and support. Together, we will continue to elevate SENSE's legacy and embrace new opportunities for learning, innovation, and impact.

Dr. Jasmin Pemeena Priyadarisini M
Professor & Dean
School of Electronics Engineering
Vellore Institute of Technology, Vellore
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HIGHLIGHTS 03

11
Patents Published

01
Patents Granted

08
Events Organized

40
organized
Guest Lectures

20
delivered
Guest Lectures

161
Publications

04 PATENTS

Patent Title	Inventors	Status
Wearable Antenna Device	Avinash Chandra, Rajkishor Kumar	Granted
A Uniplanar Crlh-tl Based Small Scaled Dual-band Metamaterial Antenna for Distinct Wireless Applications	Naveen Mishra, Dilip Kumar Choudhary	Published
A Device and Method for Diagnosing Speech Disorders Using an Audio Assessment Device	Rajesh Kumar M, Rani C	Published
Vanadium Oxide-based Bipolar Junction Transistor	Rajan Kumar Pandey, Kannam Sai Lakshmi Prasanth, Shubham	Published
Left-hand Circularly Polarized Frequency Selective Surface Polarizer and Absorber for X-band Applications	Rajesh N, Madurakavi Karthikeyan, Suganya A	Published
System for Optimizing Unmanned Aerial Vehicle (UAV) Deployment and Operation in Dynamic Vehicular Networks	Rammohan A, Poongundran Selvaprabhu, Suresh Kumar, Dhinesh Kumar R	Published
NMOS Cross-coupled LC Voltage-Controlled Oscillator (LCVCO) Circuit for Improving Frequency Stability and Lower Phase Noise	Dr Abdul Majeed K, N R Sivaraaj	Published
Dual Passband Polarization Rotation Frequency Selective Surface Device and Method Thereof	Yogesh Kumar Choukiker, Abhijit Bhowmick, Mohan K N	Published

PATENTS 04

Patent Title	Inventors	Status
Wireless Wearable Glove for Stress Detection with a Smartphone-based Message Notification System	Suraj Prakash Sahoo, Mohiul Islam, Navina K, Sakshi A. Raghavan	Published
Interactive Music App with Ai-powered Lyric Scrolling and Real-time User Engagement Features	Ganesh Khekare, Goutam Majumder, Idrasen Singh, Daniel Jayanth Nallapalli	Published
Carbon Nanotube-based Glitch Free, High Speed and Low Power Phase Frequency Detector for 6G Applications	Dr Abdul Majeed K, Antony Xavier Glittas Xavier Chelliah, Ganesamoorthy B	Published
Online Web-enabled Virtual Dashboard Control and Spatial Navigation Guidance of Self-directed Robot	Deepika Rani Sona, Rashmi Ranjan Das, Sumit Kumar Jindal, Jatin Virendra Patil	Published

PUBLICATIONS 05

High Impact Factor Publications

Details	IF
O. J. Kewate, I. Hussain, M. Prajapati, R. Kumari, Y. I. Ayuningtyas, D. S. Mhamane, M. G. Mali, M. V. Jacob, J.-Y. Lin, C. R. Kant, and S. Punniyakoti, "Unveiling the potential of M2X MXenes: Structure, properties, synthesis strategies, and supercapacitor applications," Compos. Part B: Eng., vol. 296, 2025, Art. no. 112237, doi: 10.1016/j.compositesb.2025.112237.	12.7
S. S. Jayakrishna and S. S. Ganesh, "Unveiling the infectious morphological behaviour of banana crop pathogenic nematodes inhabited from soil medium to pseudostem using an artificial intelligence approach," Comput. Electron. Agric., vol. 234, 2025, Art. no. 110277, doi: 10.1016/j.compag.2025.110277.	7.7
R. K and Y. Karuna, "Gabor-modulated depth separable convolution for retinal vessel segmentation in fundus images," Comput. Biol. Med., vol. 188, 2025, Art. no. 109789, doi: 10.1016/j.compbiomed.2025.109789.	7
S. S. Jayakrishna and S. S. Ganesh, "DAD-YOLO as a novel computer vision tool to predict the environmental impact of harmful algae presence in contaminated river water employed for large-scale irrigation to agricultural field," J. Water Process Eng., vol. 71, 2025, Art. no. 107439, doi: 10.1016/j.jwpe.2025.107439.	6.3
P. K. Das, S. Meher, A. Rath, and G. Panda, "An efficient deep learning system for automatic detection of Acute Lymphoblastic Leukemia," ISA Trans., 2025, doi: 10.1016/j.isatra.2024.12.043.	6.3
B. P, P. Kumar, S. K. Chidambaram, Y. K. Choukiker, and A. Bhowmick, "Performance of a nonlinear energy harvesting CR-enabled D2D network with censoring and NOMA," Alexandria Eng. J., vol. 118, pp. 234–245, 2025, doi: 10.1016/j.aej.2025.01.006.	6.2
A. R. Yadav and V. N. Kumar, "PSO-optimized fractional order CNNs for enhanced breast cancer detection," Results Eng., vol. 26, 2025, Art. no. 104559, doi: 10.1016/j.rineng.2025.104559.	6

05 PUBLICATIONS

Details	IF
Y. Pande and J. Chaki, "Brain tumor detection across diverse MR images: An automated triple-module approach integrating reduced fused deep features and machine learning," Results Eng., vol. 25, 2025, Art. no. 103832, doi: 10.1016/j.rineng.2024.103832.	6
Y. S and P. V, "Optimal data dissemination by using meta-heuristic strategy over 802.11p in VANETs to improve efficiency and effectiveness," Results Eng., vol. 25, 2025, Art. no. 103830, doi: 10.1016/j.rineng.2024.103830.	6
J. Anand and B. Karthikeyan, "Dynamic priority-based task scheduling and adaptive resource allocation algorithms for efficient edge computing in healthcare systems," Results Eng., vol. 25, 2025, Art. no. 104342, doi: 10.1016/j.rineng.2025.104342.	6
C. V. Ravikumar and K. Satish, "Modelling and design of a hexagonal grating structure for underwater acoustic wave sensing," Results Eng., vol. 25, 2025, Art. no. 104148, doi: 10.1016/j.rineng.2025.104148.	6
R. K. D, V. Venkatesan, R. Periyasamy, B. Rubini, G. R, O. P. Kumar, and S. Vincent, "A novel CPW-fed flexible antenna with circular polarization for enhanced vehicular communication systems," Results Eng., vol. 25, 2025, Art. no. 104337, doi: 10.1016/j.rineng.2025.104337.	6
V. Sreenivasulu and C. Ravikumar, "FractalNet-based key generation for authentication in Voice over IP using Blockchain," Ain Shams Eng. J., vol. 16, no. 3, 2025, Art. no. 103286, doi: 10.1016/j.asej.2025.103286.	6
Shubham, K. S. L. Prasanth, and R. K. Pandey, "Optimization of lattice temperature and electrothermal characteristics of stacked nanosheet FET using vanadium oxide as buried oxide and trench material for sub-5 nm technologies," Results Eng., vol. 25, 2025, Art. no. 104338, doi: 10.1016/j.rineng.2025.104338.	6
D. R and V. B. Kumaravelu, "Outage analysis and power optimization in uplink and downlink NOMA systems with Rician fading," Results Eng., vol. 25, 2025, Art. no. 104021, doi: 10.1016/j.rineng.2025.104021.	6

PUBLICATIONS 05

Details	IF
P. S, M. K. N, R. A, and A. C. J. M, "Study and design of heart-shaped microstrip patch antenna for SART applications," Results Eng., vol. 25, 2025, Art. no. 103819, doi: 10.1016/j.rineng.2024.103819.	6
P. S. R and S. S. K, "Analysis of single event transient impact in Si/Si-Ge Gate-All-Around nanowire FET using TCAD," Results Eng., vol. 25, 2025, Art. no. 103930, doi: 10.1016/j.rineng.2025.103930.	6
C. Ganesh, A. Murali, and S. S. K, "Hybrid current mirror-voltage latch sense amplifier with offset correction for enhanced yield in process-sensitive SRAM," Results Eng., vol. 25, 2025, Art. no. 104462, doi: 10.1016/j.rineng.2025.104462.	6
S. A., R. P., and M. R., "Comparative analysis of different time-frequency image representations for the detection and severity classification of dysarthric speech using deep learning," Results Eng., vol. 25, 2025, Art. no. 104561, doi: 10.1016/j.rineng.2025.104561.	6
R. S., M. H., and S. Thangavelu, "A cluster based routing for maximizing the lifetime of underwater wireless sensor network using gravitational search algorithm," Results Eng., vol. 25, 2025, Art. no. 104470, doi: 10.1016/j.rineng.2025.104470.	6
G. J., I. Singh, and D. K. Choudhary, "Gain and isolation improvement techniques for MIMO antenna: A compendious survey," Results Eng., vol. 25, 2025, Art. no. 104482, doi: 10.1016/j.rineng.2025.104482.	6
B. G., K. K. A. M., and X. A. X. G., "High-speed, glitch-free, and low power carbon nanotube based linear phase frequency detector for 6G applications," Results Eng., vol. 25, 2025, Art. no. 104353, doi: 10.1016/j.rineng.2025.104353.	6
M. K. Tanati and M. Ponnusamy, "Dense capsule stacked auto-encoder model based DDoS attack detection and hybrid optimal bandwidth allocation with routing in VANET environment," Veh. Commun., vol. 52, 2025, Art. no. 100888, doi: 10.1016/j.vehcom.2025.100888.	5.8

PUBLICATIONS 05

Details	IF
B. Samuel and M. K. Hota, "Dual Attention Based Pipelined Encoder-Decoder Network for Fetal Electrocardiogram Extraction," IEEE Trans. Instrum. Meas., Early Access, 2025, doi: 10.1109/TIM.2025.3547126.	5.6
P. P. Kumar, S. R. Eedala, A. Yammanuru, A. N. Grace, and A. C. Josephine Malathi, "Non-invasive leukemia detection via CSRR sensor," J. Hazard. Mater. Adv., vol. 18, 2025, Art. no. 100654, doi: 10.1016/j.hazadv.2025.100654.	5.4
A. Sahu, P. K. Das, I. Paul, and S. Meher, "A Hybrid Deep Learning Framework for Automatic Detection of Brain Tumours Using Different Modalities," IEEE Trans. Emerg. Topics Comput. Intell., Early Access, 2024, doi: 10.1109/TETCI.2024.3442889.	5.3

Overall Summary

06 SPONSORED PROJECTS

Explainable Artificial Intelligence (XAI) to identify the Synergistic Antimicrobial combinations for the treatment of carbapenem-resistant Acinetobacter baumannii

Faculty: Dr. George Priya Doss C (PI), Dr. Monica Subashini M (CoPI), **Dr. Sasikumar K (CoPI)**

Funding Agency: ICMR
Sanctioned Amount: INR 11100000
Sanctioned Date: 30-01-2025

Preservation of temple sculptures using deep learning

Faculty: Dr. Aparna Mohanty (PI), Dr. Asis Kumar Tripathy (CoPI)

Funding Agency: British Council
Sanctioned Amount: £10,000
Sanctioned Date: 18-03-2025

Autonomous navigation and mapping of underwater environments with ROS based AUVs

Faculty: Dr. Abraham Sampson S (PI), Dr. Zachariah C Alex (CoPI)

Funding Agency: RES0176
Sanctioned Amount: INR 2147600
Sanctioned Date: 20-03-2025

AWARDS & CERTIFICATIONS 07

Dr. S Rajalakshmi received the certification of **Best Paper Award** during **2025 Second International Conference on Emerging Trends in Electrical Machines, Power and Energy Systems - EMPOWER 2025** at SRM Institute of Science and Technology on 25-02-2025.

CHENNAI RAMAPURAM SRM INSTITUTE OF SCIENCE & TECHNOLOGY

INSTITUTION'S INNOVATION COUNCIL

SRM INSTITUTE OF SCIENCE & TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

FACULTY OF ENGINEERING AND TECHNOLOGY

BEST PAPER AWARD

This best paper award is presented to Mr./Ms./Mrs./Dr. S RAJALAKSHMI

from Vellore Institute of Technology, Vellore for the paper titled

A Low-Cost IoT and GSM-Enabled Real-Time Healthcare Monitoring and Ventilation System

presented at the 2025 Second International Conference on Emerging Trends in Electrical Machines, Power and Energy Systems - EMPOWER 2025, organised by the Department of Electrical & Electronics Engineering, SRM Institute of Science & Technology , Ramapuram, Chennai-89, on 25-26, February 2025.

Dr. K. N. Srinivas
Convenor / HOD - EEE

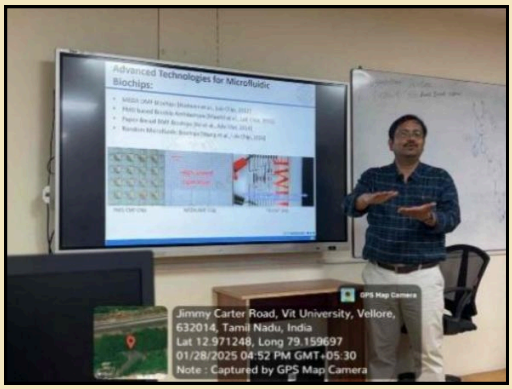
Dr. Sakthi Ganesh. M
Dean (E&T)

08 EVENTS ORGANIZED

- Entrepreneurship Development Programme on **From Idea to Impact: Disruptive Innovation & Startup Growth** was organized by Dr. Konguvel Elango and Dr. Vidhya S from 24-03-2025 to 28-03-2025.

- **Startup Expo 2025 (Innovation Week 2025)** was organized by Dr. Konguvel Elango, Dr. Vidhya S and Dr. Mythili A on 26-01-2025.

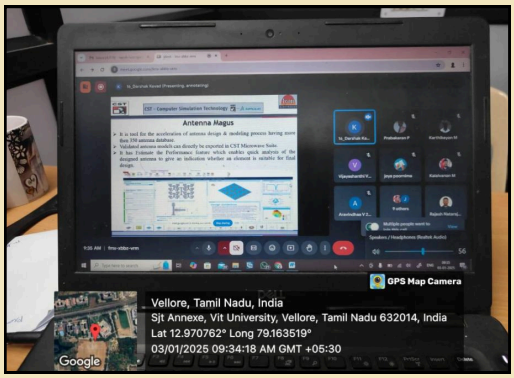
- FDP on **Emerging Frontiers in ML and DL and Applications on Edge Devices** was organized by Dr. Sri Adibhatla Sridevi and Dr. Prachi Sharma in association with TLCE from 27-01-2025 to 31-01-2025.



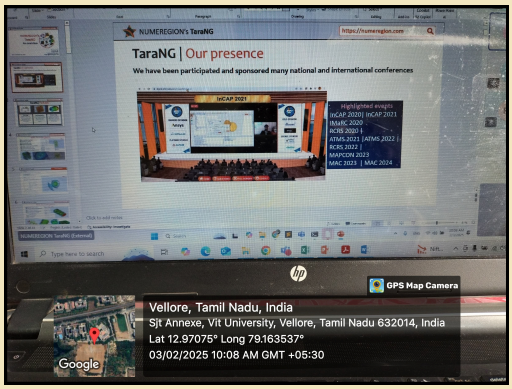
- Workshop on **Wireless Communication Design using NI USRP Platform** was organized by Dr. Vinoth Babu K, Dr. Poongundran Selvaprabhu and Dr. Rajeshkumar V from 26-02-2025 to 01-03-2025.

08 EVENTS ORGANIZED

- Workshop on **Introduction to Radar and Proposed Pojects Using Millimeter Wave Radar** was organized by Dr. Valarmathi J on 11-02-2025.



- Workshop on **Design and Implementation of High Frequesncy RF Circuits and Antennas** was organized by Dr. Rajesh N and Dr. Madurakavi Karthikeyan from 03-01-2025 to 04-01-2025.



- FDP on **Antenna Design for the Future: Innovative Approaches for 5G mm Wave and Beyond** was organized by Dr. Naveen Mishra and Dr. Dilip Kumar Choudhary from 03-02-2025 to 07-02-2025.

- **Hands-on Workshop on IoT** was organized by Dr. Sundar S, Dr. Jothish Kumar M and Dr. Karthikeyan B from 09-01-2025 to 10-01-2025.

09 GUEST LECTURES

The School of Electronics Engineering hosted a series of guest lectures featuring experts from academia and industry worldwide. These sessions explored cutting-edge advancements in communication systems, micro and nanoelectronics, sensors, biomedical technology, and embedded systems. Discussions focused on emerging technologies, industry trends, and research breakthroughs, providing students with valuable insights into real-world applications.

These sessions served as a platform for students to engage with global experts, enhancing their technical expertise and preparing them for future challenges in the field.

In the first quarter of 2025, the School of Electronics Engineering at has continued to champion academic excellence and global engagement by organizing a series of impactful guest lectures. These initiatives have significantly enriched the academic environment, exposing students to a diverse range of perspectives and real-world insights.

A total of **40 guest lectures** were hosted across various departments within the school, featuring renowned experts from academia and industry across the globe. These sessions delved into key technological domains such as advanced communication systems, micro and nanoelectronics, sensor technologies, biomedical innovations, and embedded systems. By focusing on emerging trends and cutting-edge research, the lectures provided a comprehensive overview of the rapidly evolving landscape of electronics and allied disciplines.

Through interactive discussions and technical presentations, students were able to connect theoretical foundations with practical applications, thus enhancing their readiness for dynamic engineering challenges. These engagements fostered interdisciplinary thinking, innovation, and a deepened appreciation for technological advancements shaping the future.

The faculty members of the School of Electronics Engineering also played a pivotal role in extending knowledge beyond the campus. Faculty delivered 20 invited guest lectures at prestigious institutions across the country and abroad, sharing their research insights and academic experiences with broader audiences. These contributions not only reinforced the institution's academic presence on the global stage but also promoted collaborative research and knowledge sharing with peer institutions.

10 MoU SIGNED

Institute: Samar National Research University, Russia
Date Signed: 04-03-2025
Duration: 5 Years

SAMARA UNIVERSITY

11 PhD COMPLETED

Name	Guide name	Title
CHOLAVENDAN M	Dr. Rajeshkumar V	Isolation Enhancement of Compact MIMO Antenna for Wireless Applications
SUGANYA A	Dr. Rajesh N	Investigations on the Design of Frequency Selective Surfaces for High Frequency Applications
VIGNESH RS	Dr. Monica Subhashini	An Efficient System for Segregating Thermoplastic Waste Using Optimized Deep Learning Models
SURAMPUDI SAMVEDYA	Dr. Vijay Kumar	Hybrid Learning Approaches for Flood Mapping Using SAR Data in Heterogeneous Flood Plains
SIRISHA MRUNALINI L N	Dr. Arun M	Graphene-Based On-Chip Antenna for Wireless Network-on-Chip Applications in Terahertz Band
DIVYA SHREE M	Dr. Srinivasa Rao Inabathini	Synergizing Perturbation and Coupling Mechanisms to Design and Analyze High-Performance Planar Symmetric Band Pass Filters for Wide Band Applications
S. DAYASAGAR CHOWDARY	Dr. Sudhakar M S	Novel Floorplanning Strategies Engaging Diverse Optimization Schemes
SAYYID ABDUL BASITH V	Dr. Arunkumar Chandrasekhar	Upcycling Waste Materials For The Development Of Triboelectric Nanogenerators And Self-Sustainable Sensors

12 TEAM

ADVISORY TEAM

Dr. Jasmin Pemeena Priyadarisini M
Professor & Dean
SENSE, VIT Vellore

Dr. Sakthivel R
Professor & Associate Dean
SENSE, VIT Vellore

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Dr. Sathya P
Associate Professor & HoD
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