OCT'24- DEC'24

NEWSLETTER

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY SURAT

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering is one of the oldest departments at Sardar Vallabhbhai National Institute of Technology. The department actively conducts various academic and research activities throughout the year. This newsletter presents a brief about various activities from October 2024 to December 2024.



HIGHLIGHTS

- Research Publications
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Department Vision

To be the leading department disseminating globally acceptable education, effective industrial consultancy and relevant research output.

Department Mission

To be a global centre of excellence in technical education and innovation producing competent professionals with integrity.

Programme Educational Objectives

- Graduates will be able to solve engineering / industrial problems by employing various learning resources and modern tools.
- Graduates will be able to design products to meet social, economic and environmental demand by innovative ideas.
- Graduates will be able to investigate complex problems and take up research and development work in the allied fields.
- Graduates will be able to communicate effectively through oral and written presentation of technical reports, adopting lifelong learning with integrity and ethics; and they will have interpersonal skills required to lead and nurture diverse teams.



DR. PRANAV B. DARJI Head, DoEE SVNIT, Surat

Welcome to the Department of Electrical Engineering at SVNIT, Surat. The Department has 24 well-qualified faculty members actively involved in academics, administrative duties, research, and consultancy. The broad research areas are Power Electronics, Electrical Drives, Power Systems, Control and Instrumentation. The faculty published several research papers indexed in SCIE, SCI, ESCI, Web of Science, Scopus, etc. Also, the worth of present ongoing and completed projects is more than two crores.

The Department of Electrical Engineering offers B. Tech and M. Tech programmes. The M. Tech specialisations are Power Electronics and Electric Drives, Power Systems and Instrumentation and Control. The Department of Electrical Engineering has many PhD scholars, and a significant amount of research is ongoing.

I am happy to present the 16th issue of the Department's quarterly newsletter. The present issue includes new administrative duties, STTPs/Workshops, student placement details, Research publications and projects, and faculty and student achievements.

I acknowledge the efforts of the committee members Dr. J. Venkataramanaiah, Dr. G. Sushnigdha and Dr. Suresh Lakhimsetty in editing this issue. I also thank Mr. Mayank Bhagat for assisting the committee members.

FACULTY PROMOTIONS



Dr. Mahesh Aeidapu DESIGNATION: Assistant Professor Grade-I DATE OF JOINING: 30/08/2024

Dr. K. V. Praveen Kumar DESIGNATION: Assistant Professor Grade-I DATE OF JOINING: 30/08/2024





Dr. J. Venkataramanaiah DESIGNATION: Assistant Professor Grade-I DATE OF JOINING: 30/08/2024

Dr. C. P. Gor DESIGNATION: Assistant Professor Grade-I DATE OF JOINING: 30/08/2024



Consultancy

- Work: Vetting of the documents of Ringnod water supply scheme, Ref: 2024-25/EED/131 dated 21/10/24
- **PI**: Dr. H G Patel
- Co-PI: Dr. S N Sharma
- Consultancy amount: Rs. 35000+GST
- **Client**: KESHAV KRUPA CONSTRUCTION PRIVATE LIMITED

Journal Publications

- L. E. Mathew and A. K. Panchal, "Concurrent and Non-Concurrent Pulse-Current Charging for Electric Vehicle Lithium-Ion Batteries," in IEEE Transactions on Vehicular Technology, doi: 10.1109/TVT.2024.3521949.
- L. E. Mathew and A. K. Panchal, "Pulse-Current Charging Frequency Selection for a PV-powered EV-Lithium-ion Battery Pack," in IEEE Transactions on Consumer Electronics, doi: 10.1109/TCE.2024.3507361.
- L. E. Mathew and A. K. Panchal, "An Efficient Energy Conversion in Standalone Photovoltaic Lithium-Ion Battery System With Modified Pulse-Ripple-Current Charging," in IEEE Transactions on Energy Conversion, vol. 39, no. 4, pp. 2377-2386, Dec. 2024, doi: 10.1109/TEC.2024.3405537

Conference Publications

- A. K. Panchal and L. E. Mathew, "Standalone Photovoltaic Lithium-Ion Battery System with Sinusoidal-Ripple-Current Charging," 2024 International Conference on Sustainable Energy: Energy Transition and Net-Zero Climate Future (ICUE), Pattaya City, Thailand, 2024, pp. 1-6, doi: 10.1109/ICUE63019.2024.10795601.
- K. Singh, K. D. Mistry, and H. G. Patel, "Predictive Modelling of Wind Speed for Loss Reduction in Mesh Distribution Systems Using Long Short-Term Memory Network," 2024 23rd National Power System Conference (NPSC 2024), 14-16 December 2024, IIT Indore, Madhya Pradesh, 2024.
- VRSV Bharath Pulavarthi, Hirenkumar G. Patel," Regulating Plasma blood glucose with patient specific conventional controller in insulin dependent subjects", 4th International Conference on Emerging Frontiers in Electrical and Electronic Technologies (IEEE -ICEFEET2024), 21-23 November, 2024, NIT Patna 2024.
- J. S. Nirbheram, Aeidapu Mahesh and A. Bhimaraju, "Optimal Design of a Hybrid Renewable Energy System with PV, WT, and Hydrogen Energy Storage Using Improved Search Space Reduction Algorithm," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-6, doi: 10.1109/SEFET61574.2024.10717953.
- A. Bhimaraju, G. Sushnigdha, Aeidapu Mahesh and K. Raman, "Techno-Economic Optimization of Hybrid Renewable Energy System for the Fueling of City Transportation," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-6, doi: 10.1109/SEFET61574.2024.10718003.

Conference Publications

- S. Lakhimsetty, V. T. Somasekhar and O. C. Sekhar, "A Phase-Clamped Proportional Duty Decoupled SVPWM Technique for a Four-Level Open-End Winding Induction Motor Drive," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-5, doi: 10.1109/SEFET61574.2024.10717950.
- O. C. Sekhar, A. H. Bhat and S. Lakhimsetty, "Development of a Sensor-Less Control Scheme for SRM-Based PHEV," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-5, doi: 10.1109/SEFET61574.2024.10717886.
- K. N. V. Sandeep and S. Lakhimsetty, "Dual PV String Fed Single-Phase Grid Connected System Using Heric Converter," 2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Hyderabad, India, 2024, pp. 1-5, doi: 10.1109/SEFET61574.2024.10718030.

STTP CONDUCTED

Title: One-Day International Lecture Series On "Wide BandGap (WBG) Power Devices"

Date: 243-12-2024

Coordinators: Prof. P. B. Darji, Dr. Mahesh Aeidapu, Dr. J. Venkataramanaiah, Dr. Suresh Lakhimsetty





IEEE Day Celebrations

Speaker: Dr. V.V.S. Pradeep Kumar, Senior R&D Engineer, Hitachi Energy **Date:** 01/10/2024

Venue: Seminar Hall, Department of Electrical Engineering, SVNIT Surat





Speaker: Prof. Ashwani kumar, Professor, Department of Electrical Engineering, NIT Kurukshetra

Date: 07/10/2024

Venue: Seminar Hall, Department of Electrical Engineering, SVNIT Surat





Faculty Achievements

• Dr. Mahesh Aeidapu serve as Technical Activity Chair for IEEE Gujarat Section Joint Chapter of Industrial Electronics, Industry Applications, and Power Electronics Societies (IES, IAS, & PELS)

Ph.D. Awardees

NAME OF THE STUDENT: AMBATI BHIMARAJU (DS19EL007) DATE OF PH.D. VIVA-VOCE: 07/10/2024 THESIS TITLE: TECHNO-ECONOMIC OPTIMIZATION OF PV-WIND HYBRID RENEWABLE ENERGY SYSTEMS WITH DIVERSE STORAGE SOLUTIONS SUPERVISOR: DR. MAHESH AEIDAPU

NAME OF THE STUDENT: LINTA ELIYA MATHEW (DS19EL004) DATE OF PH.D. VIVA-VOCE: 10/10/2024 THESIS TITLE: IMPLICIT-EXPLICIT PHOTOVOLTAIC MODELS AND GRID-FREE PHOTOVOLTAIC LITHIUM-ION BATTERY WITH PULSE-CURRENT CHARGINGUTIONS SUPERVISOR: PROF. ASHISH K. PANCHAL

NAME OF THE STUDENT: AKOLKAR SONALI MAYURESH (DS18EL010) DATE OF PH.D. VIVA-VOCE: 09/12/2024 THESIS TITLE: CLASSIFYING POWER SWINGS FROM FAULTS FOR EHV TRANSMISSION LINE BY IMPLEMENTING DWT AND PEAK DETECTION ALGORITHM WITH SPARSE APPROXIMATION SUPERVISOR: PROF. HITESH R. JARIWALA

TEAM



GANGIREDDY SUSHNIGDHA ASSISTANT PROFESSOR DOEE, SVNIT SURAT



J.VENKATARAMANAIAH ASSISTANT PROFESSOR DOEE, SVNIT SURAT



SURESH LAKHIMSETTY ASSISTANT PROFESSOR DOEE, SVNIT SURAT



MAYANK BHAGAT SENIOR TECHNICIAN DOEE, SVNIT SURAT