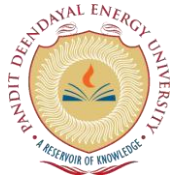


**International Conference on
Sustainable Energy Technologies and Computational Intelligence
(SETCOM 2025)
Department of Electrical Engineering, SoET
Pandit Deendayal Energy University (PDEU), Gandhinagar, Gujarat,
India |**

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SETCOM 2025 Special Sessions on

**“Advanced Multilevel Converters: Topologies, Modulation Techniques,
and Control Strategies”**

Aim: The aim of this session is to provide a comprehensive overview of advanced multilevel converters, focusing on their topologies, modulation techniques, and control strategies. The session will explore innovative designs that enhance performance, efficiency, and reliability in various applications, including renewable energy systems and electric drives. By fostering discussions among experts in the field, this session aims to highlight current challenges, emerging trends, and future directions in multilevel converter technology.

Scope of the Session:

The session on "Advanced Multilevel Converters: Topologies, Modulation Techniques, and Control Strategies" will provide a comprehensive exploration of the latest advancements in multilevel converter technology, catering to both researchers and industry professionals. Multilevel converters have received significant attention for improved power quality. Moreover, replacing isolated DC sources with voltage-controlled capacitors makes this technology much more appealing for the industries due to reduced cost and size. Designing auxiliary circuit to make necessary paths for capacitors' currents has been investigated. However, advanced balancing techniques with interesting feature of redundant switching states are preferred to generate same voltage level, using different current paths, and balance the capacitors voltages without requiring external controllers. Thus, the voltage balancing of the DC capacitors in Multilevel Converters is a matter of importance especially in rectifiers and grid-connected inverter applications such as battery chargers, active filters, STATCOM, DVR, etc.

Topics of interest include, but are not limited to:

A list of 5-10 relevant areas under proposed theme of special issue

- Innovative Capacitors based Multilevel Inverter Topologies
- Design and Control of Multilevel Inverters for High-Power Applications
- Multilevel Inverter Applications in Renewable Energy System
- Energy Management and Power Electronics for Smart Grids and Microgrids
- Advanced Control Techniques for Multilevel Inverter in Electric Vehicle Charging Systems
- Advanced modulation strategies (SPWM, SVM, SHE) for enhanced performance
- Renewable Energy Integration: Challenges and Solutions Using Multilevel Inverter
- Design and Optimization of Multilevel Inverter for EV system

- Predictive control, adaptive control, and real-time optimization Advanced control algorithms for voltage balancing and stability
- Recent advances on Multilevel Converters for Renewable Energies Integration
- Voltage/Current decoupling techniques for Multilevel Converter control

Special Session Organizers (names and contact emails):



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	<p>Dr. Yatindra Gopal, received his B.Tech. Degree in Electrical Engineering from Rajasthan Technical University (RTU), Kota, India in 2010, M.Tech. Degree in Power Electronics & Drives from Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, India in 2013 and Ph.D. Degree in Power Electronics & Drives from RTU, Kota, India in 2020. He is currently an Associate Professor with the Department of Electrical and Electronics Engineering, Lendi Institute of Engineering & Technology (A), Vizag-Vizianagaram Road, Andhra Pradesh, India. His Areas of Interest are Power Electronics, Efficient Multilevel Inverters Design, High-Gain Converters, Photovoltaic Systems, Power Quality, and Harmonics Elimination of Multilevel Inverters. He is a regular reviewer of several IEEE, IET, and Wiley journals.</p>
	<p>Dr.P. Janaki was born in Visakhapatnam, A.P, India in 1984. She received her B.Tech degree in Department of Electrical and Electronics Engineering from Raghu Engineering College, Visakhapatnam, India and received her M.E. degree in Power Electronics Drives and Control in Department of Electrical and Electronics Engineering from the Andhra University College of Engineering, Visakhapatnam. She completed her Doctoral degree in School of Electronics and Electrical Engineering from Lovely Professional University, Paghwara, Punjab in the area of Gas insulated Substations. She is also working as Associate Professor in the Department of Electrical and Electronics Engineering in LENDI Institute of Engineering and Technology, Vizianagaram. Her research area includes Gas Insulated Substations, applications of Power electronics to power systems, Renewable energy recourses, Hybrid electric vehicles etc.</p>