

**Special Session proposal for  
International Conference on Intelligent and Innovative Technologies in Computing,  
Electrical and Electronics (IC-IITCEE 2023)**

1. **Title of the special session** **ENERGY SYSTEMS-TO-GRID (E2G) INTEGRATION**
  
2. **Objective of the special session** Digitalization and automation have increased dependence on electrical systems and thus, a fully decarbonized ecosystem is necessary to realize this in a cost-effective and green manner. With the rising practice of integrating the power grid and energy systems, energy system-to-grid (E2G), has become an emerging practice to create an opportunity for energy systems such as renewable energy sources, energy storage, electric vehicles, and buildings to generate new value streams with energy services. E2G aims to help to reduce energy costs through the optimized use of resources and alleviate congestion in the power grid through flexible energy operations. E2G encompasses the development of new standards and codes for the interconnection of more distributed energy systems and helps in designing a future that enhances energy resilience without investments in huge infrastructure upgrades to the current system.
  
3. **Topics of the special session**
  - Grid Integration of Renewable Energy Systems
  - Grid Integration of Building Energy Systems
  - Grid Integration of Vehicles
  - Grid integration of energy storage systems
  - Design and performance analysis of Grid-tied converters
  - Economic dispatch and frequency control of E2G systems
  - Power quality analysis in modern power systems
  - Techno-economic analysis for energy systems
  - Policy and regulatory aspects for E2G integration
  - Smart grid-based communication and P2P power trading
  
4. **Proposers full name and affiliation (Chair of the special session)**
  - 1) **Dr. Amit Vilas Sant (Chair)**  
Associate Professor  
Department of Electrical Engineering  
School of Technology  
Pandit Deendayal Energy University (PDEU)  
Gandhinagar, Gujarat
  

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  - 2) **Dr. V. S. K. V. Harish (Co-Chair)**  
Assistant Professor  
Department of Electrical Engineering  
Netaji Subhas University of Technology (NSUT)  
*State University under Delhi Act 06 of 2018, Government of NCT of Delhi*  
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**3) Dr. Avirup Maulik (Co-Chair)**

Assistant Professor

Department of Electrical Engineering

Indian Institute Technology – BHU