

Special Session Proposal

Title- “Recent Advancement in Integration of Renewable Energy to the Grids: Techniques, Challenges, Applications.

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Objective & Overview of Session

In recent years renewable energy is the key source in the power and mobility sectors. The integration of multiple renewable energy sources and also the bio-inspired fuels with the grid power have gained popularity for effective energy utilization. Power electronic devices and the smart grids represents some of the most critical elements for efficient and reliable operation for application in all-electric hybrid energy systems. The electric hybrid energy systems have played a key role in microgrids and zero-emission transportations, to this end, hybridization in electric energy systems is a trending area of research which is addonsby the advancements in power electronic converters have gained popularity not only to achieve compact integration hybrid electric energy systems, but also higher efficiency and power density. Over the past few years, several innovations have taken place. In order to address these challenges, there is also need of a cyber-physical microgrids to develop new methods by taking into account underlying and advanced techniques such as multi-agent systems, artificial intelligence-based control, big data cloud computing and management, and so on.

With these opportunities for improvement in mind, this special session aims to attract the latest developments in innovative control approaches, bio-fuel, optimization theory, energy management for cyber-physical microgrids, multi-port power converters and their applications to facilitate exchange of experiences to advance this field.

Topics of interest include, but are not limited to:

1. Integration of renewable energy with the grid.
2. Artificial Intelligence based Controlled Grids
3. Advancement in different converter topologies
4. Optimization and Control Techniques involved in the renewable energy
5. Cyber security in the microgrids
6. Energy management and costing in the renewable power sectors.
7. Advancements in the vehicle to grid & EV applications
8. Bio fuel driven localized grids.