

Special Session on

**“DC-DC Power Converters: Smart Placement of Reactive Components and
Semiconductor Devices, Control for Renewable Energy Conversion Systems”**

Organized by

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Call for Papers

In renewable energy system, power converters play a vital role in controlling voltage and current as well as power flow in different levels, especially in DG and microgrid. Owing to this, High step-up DC-DC converter gained popularity mainly for application involving renewable energy system. However, the size, cost, power capacity, voltage or current conversion capability, number of reactive components and semiconductor devices, number of sources, control, efficiency, and reliability etc. are critical for efficient operation and economic installation. In recent trends, numerous converters are proposed by smart placement of reactive components and semiconductor devices to achieve high voltage conversion ratio with advanced control techniques. The aim of this special session is to pass the ideas of the professional and research group into a common platform, to present the latest development in converters in terms of the power circuits, synthesis of power converters, mathematical modelling, design, and advanced control etc.

Topics of interest include, but are not limited to:

- Power circuitry of High step-up DC-DC Converter.
- Synthesize and Circuit formation methodology of DC-DC Converter

- Switched Inductor/Capacitor Based Converter.
- Non-Isolated and Isolated Converter.
- Bidirectional and Multiple Port DC-DC Converters.
- Analysis and Mathematical Modelling of DC-DC Converters.
- Current Source DC-DC Converter.
- Multilevel DC-DC Converter.
- Advanced Technique to Control Voltage and Current of DC-DC converter.
- Dynamics of DC-DC Converter.
- State space modeling of dcdc converter.
- Discrete sliding mode control.
- Model reference model predictive control.
- Parametric variation and robust control.
- Fault tolerant converter configuration.
- Transformerless configuration with redundant configuration.
- Resonant converter reduced transformer configuration.
- Loss analysis and thermal modeling dcdc converter.
- Cost analysis, reliability and stress analysis.
- New chain of DC DC converters