



Advanced Power Electronic Converters for Renewable Energy Integration

Objectives:

Integrating renewable and distributed energy resources, such as photovoltaics (PV) and energy storage devices, into the electric distribution system requires advanced power electronics, or smart inverters, that provide grid services such as voltage and frequency regulation, ride-through, dynamic current injection, and anti-islanding functionality.

In some applications where high power level is required, the switching frequency of the power semiconductors is limited and the use of multilevel or interleaved converters becomes mandatory in order to get an acceptable power quality. This session addresses the issues of advanced control techniques applied to such converters to improve their performance, efficiency, reliability and cost-effectiveness.

Topics of the Special Session:

- Advanced control of power electronics in DC grids
- Control of paralleled or interleaved topologies
- Novel high step-up DC-DC power converter topologies
- Novel DC-AC power converter topologies as an interface between DC and AC grids
- Modeling, simulation, and control of emerging power converters
- Applications of power converters in renewable energy for DC grid integration
- Applications of power converters in energy storage systems for DC grid integration
- Power quality control in renewable energy systems
- Real-time control and simulations of high power converters

Name & Affiliation of the Proposer :

T Vijay Muni (Phd- Thesis Submitted)

Assistant Professor,

Department of Electrical & Electronics Engineering,

Koneru Lakshmaiah Education Foundation,

Vaddeswaram, Guntur Dt., Andhra Pradesh, India.