

THE 20TH IEEE INTERNATIONAL CONFERENCE ON INDUSTRIAL TECHNOLOGY IEEE-ICIT 2019

13 - 15 FEBRUARY 2019, MELBOURNE CONVENTION AND EXHIBITION CENTRE, MELBOURNE, AUSTRALIA

Special Session on

“Advanced Control of High Power Converters for Sustainable Energy”

Organized by

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Call for Papers

Renewable sources, such as photovoltaic panels, wind generators and fuel cells, could be used to feed an isolated load in stand-alone systems, or connected directly to the grid for cogeneration. In either case, this connection is made through power electronics interfaces that should ensure high stability, voltage regulation, power flow control, and low electromagnetic emission, along with high power density, low cost and high reliability. 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 interest include, but are not limited to:

- Advanced control of multilevel inverters
- Advanced control of power electronics in DC grids
- Grid-connectivity control requirements
- Control of paralleled or interleaved topologies
- Modeling and model-based control of switch-mode power converters
- Optimal control in hybrid cogeneration systems
- Predictive control of power converters
- Intelligent control of power converters
- Direct power control of power converters
- Power quality control in renewable energy systems
- New PWM techniques for power electronics control
- Real-time control and simulations of high power converters

IES Technical Committee Sponsoring the Special Session: TC – Power Electronics (Control in Power Electronics subcommittee and Power Quality subcommittee)

Accepted papers will be published in an IEEE proceedings volume and will be also submitted for the International Publication in *IEEEExplore*