



ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

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Special Session on

Grid Connected Power Electronics for Advanced Functionalities: Converter Design, Topologies, Modulation Techniques, and Control Techniques

Organized and co-chaired by:

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Call for Papers

Technical Outline of the Session and Topics:

The continuous evolution of the electrical grid is a challenging scenario. Power electronic converters appear as a key and enabler asset for the future electrical grid. However, new grid scenarios require new challenging services that the power converters have not been designed or are not prepared for yet: higher power increase, power quality standards, negative sequence compensation, harmonic filtering, etc. All these may have a direct impact at all levels of the power electronics: power converter design stage/tools, power converter topologies or modularity for power increase, advanced modulation techniques, internal control, power converter control to give the new required services or overall solution concept. This special session aims to cover this challenging objective.

Topics of the Session include, but are not limited to:

- Power converter design to address grid requirements: new tools, hardware, filter design, converter sizing, etc.
- High-power converter configurations: modular power converters, modular multilevel converter, parallelization of power converters, etc.
- Advanced modulation techniques.
- Advanced internal converter controls: capacitors control, common mode reduction, etc.
- Modelling techniques of grid connected power electronics.
- Advanced control techniques to provide services to the grid: variations to classical control loops, model predictive control, etc.
- New advances in existing applications: Active Power Filters, HVDC, MVDC links, STATCOMs, SSSCs, Wind Turbines, Photovoltaic Systems, Green Hydrogen Systems, etc.
- Realistic studies of grid connected power electronics.
- Hardware In the Loop, Power Hardware In the Loop, Digital Twin simulations.

Author's schedule:

Deadline for submission of special session papers	April 15, 2024
Notification of acceptance	June 10, 2024
Deadline for submission of final manuscript	July 01, 2024

Early submission is highly encouraged for early decision notifications!

All the instructions for paper submission are included in the conference website:

www.iecon-2024.org



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