

34th IEEE International Symposium on Industrial Electronics (ISIE 2025)

Special Session on

“Advanced Modeling and Control of Grid-Connected Converters for Distributed Generation and Power Quality”

Organized by

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Call for Papers

Theme: (Short description of approximately 100 words)

Renewable sources, such as photovoltaic panels, wind generators and fuel cells, are usually connected directly to the grid for cogeneration. 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 modeling techniques applied to such converters for real-time simulations and control design in order to improve their performance, efficiency, reliability and cost-effectiveness.

Topics of interest include, but are not limited to: (Provide a list of 5-10 special areas)

1	Advanced control of multilevel inverters	
2	Real-time control and simulations of high-power converters	
3	Grid-connectivity control requirements	
4	Control of parallel or interleaved topologies	
5	Modeling and model-based control of switch-mode power converters	
6	Optimal control in hybrid cogeneration systems	
7	Predictive control of power converters	
8	Intelligent control of power converters	
9	Power quality control in renewable energy systems	
10	Digital twin modelling of power electronics devices	

Reviewers (Provide 10-20 names with email and affiliation address)

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Submission Procedure:

All the instructions for paper submission are included in the conference website: <https://ieee-isie-2025.org/>

Deadlines:

Full paper submission:	March 31, 2025
Paper acceptance notification:	April 15, 2025
Camera-ready paper submission:	May 14, 2025

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