

Call for Papers for the Special Session on

Advanced Multilevel Converters with DC Capacitors: Topology, Modulation, Voltage Balancing, and Control Strategies

Organizers and Co-chairs

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Technical Outline of the Session and Topics

Multilevel converters have received significant attention for improved power quality. Moreover, replacing isolated DC sources with voltage-controlled capacitors makes this technology much more appealing for industries due to reduced cost and size. Designing auxiliary circuits to make necessary paths for capacitors' currents has been investigated. However, advanced balancing techniques with the interesting feature of redundant switching states are preferred to generate the same voltage level, using different current paths, and balance the capacitor's voltages without requiring external controllers. Thus, the voltage balancing of the DC capacitors in Multilevel Converters is important, especially in rectifiers and grid-connected inverter applications such as battery chargers, active filters, STATCOM, DVR, etc.

Topics of this Special Session Include but are not limited to

- Innovative capacitors-based multilevel inverter topologies.
- Novel multilevel rectifier topologies with voltage balancing techniques.
- Emerging modulation techniques for voltage balancing of auxiliary capacitors in multilevel converters.
- Advanced controllers for voltage balancing of auxiliary capacitors in multilevel converters.
- Auxiliary circuits for voltage balancing of capacitors in multilevel converters.
- New applications of multilevel converters.
- Emerging multilevel converters for electrified transportation.
- Recent advances in multilevel converters for renewable energy integration.
- Voltage/current decoupling techniques for multilevel converter control.

Timeline for Author

Deadline for submission of special session papers	January 10, 2025
Notification of acceptance	March 10, 2025
Deadline for submission of final manuscripts	April 15, 2025

All the instructions for paper submission are available on the conference website.

