

Call for Papers for the Special Session on

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

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Technical Outline of the Session and Topics

With the rapid advancement of electric vehicles (EVs) and the growing demand for high-efficiency power conversion systems, resonant power converters have emerged as a pivotal solution to address the limitations of conventional converters. Traditional power converters often experience significant switching losses and require bulky heat dissipation components, hindering their performance and reliability. In contrast, high-frequency resonant converters leverage resonant L-C networks to produce sinusoidal voltage and current waveforms, significantly reducing switching stress and improving overall efficiency. This technique, combined with Zero Voltage Switching (ZVS) and Zero Current Switching (ZCS) methodologies, offers a highly efficient and effective approach for power management in EVs.

This special session invites experts and researchers to present their latest findings and innovations in high-frequency resonant power converters, focusing on their design, control strategies, and implementation for EVs.

Topics of this Special Session Include but are not limited to

- Design and optimization of resonant converters for EV applications
- ZVS and ZCS techniques in high-frequency power converters
- Advanced control algorithms for improving converter performance
- Integration of resonant converters in EV powertrains
- Thermal management and efficiency improvements in resonant converter systems
- Application of resonant converters in renewable energy and smart grids
- Comparative analysis of resonant and traditional converters in EV systems.

Timeline for Author

Deadline for submission of special session papers March 15, 2025

Notification of acceptance March 31, 2025

Deadline for submission of final manuscripts April 15, 2025

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

