

Call for Papers for the Special Session on

Power Electronics for End-to-End DC Networks

Organizers and Co-chairs

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Technical Outline of the Session and Topics

The move away from fossil fuels to reduce carbon emissions, alleviate airborne pollutants, create energy independence, increase efficiencies through DC transmission, and create long-term sustainability for humankind. Additionally, due to advancements in several diverse technologies, we can electrify almost everything. The electrification of transportation, heat pumps, and commercial and residential thermal load by electrified heat are a few applications that will dominate over the coming decades. Existing electrical infrastructure is a century old and requires significant upgradation, and adopting DC seems to solve several issues and provides efficient solutions. So, this special session invites research articles that deal, but are not limited to, DC/DC converters, inverters for residential and commercial grids, intelligent protection systems both DC and AC, control of DC microgrids, fault-tolerant power converter topologies, operation aspects, and control emerging residential power network systems.

Topics of this Special Session Include but are not limited to

- DC and hybrid AC/DC microgrid architectures and their optimal design methodologies.
- Power electronics converter topologies and control techniques for residential DC grids.
- Power electronics systems for efficient integration of distributed energy generators, energy.
- Storage and loads into residential microgrids.
- Active power filtering, load-sharing, and islanding operation.
- Condition monitoring, intelligent protection, fault diagnosis, and self-healing.
- Predictive maintenance, adaptive communication-based protection.
- Cyber security issues in residential microgrids.
- Power management strategies, distributed control, and/or decentralized decision-making.
- Operation and control of interconnected residential microgrids (i.e., microgrid communities).

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.

