

Call for Papers for the Special Session on

Single-Stage Buck/Boost Inverters—Topologies, Control Strategies, and Applications

Organizers and Co-chairs

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Technical Outline of the Session and Topics

Single-stage buck/boost inverter topology effectively overcomes the boost ratio limitation of traditional single-stage inverters while also avoiding the complex control and additional power losses of two-stage topology. This design is able to achieve high efficiency, compact size, reduced weight, and low cost. Consequently, there is a fast-growing interest in the development of single-stage topologies. This trend has enabled the emergence of a variety of designs of single-stage topologies with significant efficiency improvement and increased compactness and voltage gain. Investigations have been primarily conducted on various topologies, modulation techniques, control strategies, and a spectrum of applications, such as fuel cells, grid integration, motor drives, etc. The objective of this special session is to concentrate all pertinent contributions on single-stage buck/boost inverters, thereby fostering a collaborative environment for the presentation and discussion of their cutting-edge research, development, and practical applications.

Topics of this Special Session Include but are not limited to

- Various single-stage buck/boost inverter topologies
- Modulation and control strategies
- Multilevel / Multiphase single-stage inverters
- Wide Band Gap devices implementation in single-stage buck/boost inverters
- Techniques of optimizing circuit parameters
- Applications in renewable energy power systems
- Applications in electric vehicles and motor drives
- Novel applications

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.

