

Call for Digests: Special Session on

Advanced Control Techniques for Power Converters, Electric drive systems and Renewable Energy Sources

Organized and co-chaired by

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Technical Outline of the Special Session

In this advanced technical session focusing on "Advanced Control Techniques for Power Converters, Electric drive systems and Renewable Energy Sources," participants will explore recent strategies such as Field-Oriented Control (FOC), Direct Torque Control (DTC), artificial intelligence (AI) control techniques, and Model Predictive Control (MPC) for electric drives. This session also focuses on advanced inverter control methods for power converters, along with Maximum Power Point Tracking, voltage stabilization, and energy management control strategies. Through this session, attendees will gain knowledge of new research in control areas, including fault detection and tolerance, digital control implementation, and the coordination of hybrid renewable systems in microgrid architectures.

Additionally, this session will address the relevance of these advanced control techniques in achieving the United Nations Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). This session contributes to the increased adoption of clean energy solutions, thus supporting global efforts towards sustainable development and climate resilience.

Topics of the Special Session

- Advanced Control Strategies for Power Converters and Electric Drive Systems
- Advanced Modulation Control Techniques for Grid-Connected Renewable Energy Sources
- Multilevel Inverter Control for Enhanced Power Quality
- Maximum Power Point Tracking (MPPT) in Renewable Energy Systems
- Energy Storage Integration in Hybrid Renewable Energy Systems in Microgrids
- Climate Resilience through Advanced Control in Renewable Systems: Aligning with SDG 13
- Emerging Control Trends in Renewable Energy Storage and Management
- Impact of Advanced Control Techniques on SDG 7: Affordable and Clean Energy
- Any other related topics.

Important Dates

- Digest Submission Deadline – 30th of June.
- Notification of Acceptance – 18th of August.
- Final Paper Submission – 29th of September.

Digest Template and Submission Information

<https://spec-ieee.org/spec2024/digest-submission/>

Digest Submission Link

<https://easychair.org/conferences/?conf=ieeespec2024>