



ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

Chicago | Illinois, November 3-6, 2024

Special Session on

Advanced Predictive Control for Smart Power Systems

Organized and co-chaired by:

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Call for Papers

Technical Outline of the Session and Topics:

In the realm of smart power systems, encompassing power transmission and renewable energy generation, power converters are paramount in ensuring seamless energy flow and delivering high-grade electricity. Their high-performance operation hinges on precise prediction and cutting-edge control strategies. As the demand for greater efficiency, effectiveness, reliability, and flexibility soars in energy generation, conversion, and utilization, the quest for predictive and control techniques has gained unprecedented momentum, yielding remarkable breakthroughs. This surge in interest has led to a surge in research papers, expounding vast new knowledge in this domain. Concurrently, the relentless evolution of computational intelligence technologies, encompassing neural networks, fuzzy logic, and evolutionary computation, has opened vast horizons for prediction, optimization, and control applications. New industrial use cases are continually emerging, heralding immense potential. Against this backdrop, a dedicated session exploring prediction, optimization, and control in energy generation, conversion, and applications — specifically, the control of motors and power converters — is both timely and captivating for researchers and industry alike. The proposed session aims to showcase and disseminate the latest advancements in predictive control for smart power systems. It will focus on the most innovative approaches, addressing challenges, requirements, methodologies, technologies, and applications, thus propelling the field forward in its quest for more intelligent and efficient power systems.

Topics of the Session include, but are not limited to:

- Advanced Predictive Control in Motor Drive Systems: Strategies and Applications for Enhanced Efficiency and Performance
- Applications of Advanced Predictive Control Algorithms in Smart Power Systems
- Predictive Control Technologies Based on Machine Learning for Smart Grids
- The Role of Predictive Control in Power Balancing and Optimization for Renewable Energy Integration
- Applications of Advanced Predictive Control in Microgrid Management and Stability Enhancement
- Predictive Control Strategies for Smart Power Converters and Their Real-Time Performance Optimization
- Decision Support Systems for Predictive Control in Smart Grids Based on Big Data Analysis

Author's schedule:

Deadline for submission of special session papers April 15, 2024

Notification of acceptance June 10, 2024

Deadline for submission of final manuscript July 01, 2024

Early submission is highly encouraged for early decision notifications!

All the instructions for paper submission are included in the conference website:

www.iecon-2024.org

