IECON 2026
Doha, Qatar | 18-21 October
The 52nd Annual Conference of the IEEE Industrial Electronics Society

Call for Papers for the Special Session on

Artificial Intelligence for Robust Wireless Power Transfer Systems: Innovations in Design, Control, and Safety

Organized and co-chaired by

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Technical Outline of the Session and Topics

The rapid advancement of modern power electronics and resonant techniques has revolutionized wireless power transfer (WPT) systems, enabling efficient, contactless energy delivery in industrial applications such as electric vehicle charging, autonomous vehicles, and robotics. However, practical implementation of wireless charging systems still faces significant challenges in safety, performance, interoperability, and stability, particularly in medium- to high-power applications. Recently, artificial intelligence (AI) has shown its potential in various research areas, hence this special session aims to explore the use of AI in WPT systems and welcomes insightful research and innovative implementations in compensation circuits, circuit topologies, control strategies, or any novel ideas that advance the development of wireless power transfer technology.

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

- AI-based Wireless Power Transfer Systems
- Data-Driven Foreign Object Detection and Position Identification Techniques
- Reinforcement Learning Trained Controller Implementations
- Magnetic Coupler Designs and AI-Assisted Parameter Optimization
- Compensation Topology and Power Converter Designs
- Neural Network based Parameter Estimation Strategies
- Any Related Topic Related to Wireless Power Transfer

Timeline for Authors

All the instructions for paper submission are available on the conference website. Please visit www.iecon2026.org or scan the QR code for the timeline.