

Call for Papers for the Special Session on

Artificial Intelligence for Design, Modeling, and Optimization of Electric Machines

Organized and Co-chaired by

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Technical Outline of the Session and Topics

Electric machines are critical components in energy conversion systems, enabling efficient, high-power-density operation; they are increasingly used in applications such as transportation electrification and renewable energy systems. Conventional electric machine design, modeling, and optimization rely on finite element analysis, lumped-parameter models, and hybrid models, which are computationally intensive and limited in nonlinear, high-dimensional design spaces. To address these limitations, artificial intelligence (AI), including physics-informed machine learning methods, is leveraged to enable surrogate modeling, multi-physics co-design, and scalable optimization with reduced computational cost, while supporting uncertainty quantification and automated design methods. This special session focuses on AI-enabled design, multi-physics modeling, and optimization of next-generation, high-performance electric machines.

Topics of the Session Include, but Are Not Limited To:

- AI-Driven Multi-Objective Electromagnetic Design
- Physics-Informed Machine Learning for Motor Modeling
- Surrogate Models for Computationally Efficient Performance Prediction
- Multi-Physics Co-Design of Electromagnetic and Thermal Systems
- Data-Driven Thermal Modeling and Cooling Optimization
- AI for NVH Prediction and Mitigation in Electric Machines
- Uncertainty Quantification in Multi-Physics Machine Design
- Reinforcement Learning for Automated Design Exploration
- Hybrid Physics–AI Modeling of Saturation and Losses
- AI-Assisted Design of Efficient, Thermally Stable, and Low-Noise Electric Machines

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.

Paper Submission: May 31st, 2026

Acceptance Notification: July 15th, 2026

Final Submission and Registration: August 15th, 2026

