Special Session on

Next-Generation Thermal Management of Electric Vehicle Motor Drives

Organized and co-chaired by:

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Abstract

The current demand metrics for electric vehicle (EV) motors are mainly concentrated on high power density, high efficiency, and lightweight, which leads to electric motors with compact structures and higher power density. Therefore, in parallel with developing novel electromagnetic designs, implementing novel thermal management systems and thermal analysis tools are key enabling factors for the next generation of e-machines for EV applications.

This special session will provide a forum for researchers and practitioners to exchange their latest theoretical and technological achievements and identify critical issues and challenges for future investigation in the thermal analysis of electric machine drives for EV applications. The submitted papers are expected to raise original ideas and potential contributions to theory and practice.

Topics of interest include but are not limited to:

- Temperature prediction of electric machine drives for EV applications.
- Thermal behavior evaluation of electric machine drives under different control modes.
- Thermal management of EV's electric machine drives by implementing different cooling systems.
- Heat transfer and fluid flow modeling and analysis in EVs electric machine drives.
- Cooling designs/applications for EV's electric machine drives.

- Heat transfer enhancement techniques in EV's electric machine drives.

Important dates

- Full Paper Submission: February 1, 2026
- Full Paper Notification: May 1, 2026
- Final Paper Upload: June 1, 2026

Submission of papers

Paper submission follows the rules of regular papers. All the instructions for paper submission are included in the conference website:
https://icem2026.ubi.pt/submission.html