



2026 Fourth International Conference on Sustainable Mobility Applications, Renewables and Technology (SMART)

October 18-21, 2026

Special Issue of the **World Electric Vehicle Journal (WEVJ)**

on SMART 2026: Electric Machines Drives Applied

in Transportation Electrification

Scope:

In recent years, the advances in the lithium-ion battery technology makes it possible a large penetration of electric vehicles (EVs), with ranges reaching up to 750km, in the worldwide fleets. Beyond road vehicles, the transportation electrification concerns also those on rail, sea, and air. One of the key components around which is built the great progress in the transportation electrification field, one can distinguish the electric machine which is operated as motor in acceleration driving cycles and generator in the regenerative braking one. This special issue is dedicated to all topics related to electric machine drives applied to transportation electrification systems, including (but not limited to) the following:

- Design, sizing, and optimization of ac electric machines,
- Electromagnetic and multi-physics modelling of ac electric machines,
- AC electric machines cooling system design and performance assessment,
- Energy efficiency improvement of AC electric machine drives,
- Control strategies synthesis and implementation in AC electric machine drives, applied to acceleration and regenerative braking driving cycles,
- Assessment of the control strategies robustness against parameter variations due to heating and saturation,
- AC electric machine drives fault-tolerance investigation,
- Diagnostic and torque recovery techniques in presence of faulty-scenarios,

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