



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

October 18-21, 2026

Call for Contributions to the Special Session on High-Quality Electrical Machines and Advanced Drive Control for Electrified Transportation Applications

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Thematic: High-Quality Electrical Machines and Advanced Drive Control for Electrified Transportation Applications

The rapid development of electrified transportation, including electric vehicles, electric aircraft, rail transit, marine propulsion, and emerging intelligent mobility systems, is driving increasing demand for high-performance electrical machines and advanced drive control technologies. High power density, high efficiency, high reliability, fault tolerance, thermal robustness, low noise and vibration, and wide-speed-range operation have become key requirements for next-generation transportation electrification.

This Special Session aims to provide an international forum for researchers, engineers, and industry practitioners to present recent advances, emerging challenges, and future trends in high-quality electrical machines and advanced drive control for sustainable and intelligent transportation systems. Contributions covering theoretical analysis, modeling, design optimization, control strategies, condition monitoring, thermal management, reliability assessment, and experimental validation are highly encouraged.

Topics of Interest

Topics of interest include, but are not limited to:

- High-speed and high-power-density permanent magnet machines
- Advanced electromagnetic and multi-physical design of electrical machines
- Thermal management and coupled electromagnetic–thermal modeling
- Loss reduction, efficiency improvement, and power density enhancement
- Advanced drive control for wide-speed-range and high-dynamic operation
- Sensorless control, predictive control, and intelligent control of motor drives
- Fault diagnosis, fault-tolerant control, and reliability-oriented drive systems
- NVH reduction, torque ripple suppression, and vibration control
- Advanced materials and manufacturing technologies

Accordingly, this Special Session aims to promote innovative tools, methodologies, and real-world applications that support the transition toward sustainable, efficient, and resilient electrified mobility. Contributions addressing cutting-edge research, advanced machine and drive technologies, control strategies, experimental investigations, industrial case studies, and interdisciplinary approaches are highly encouraged.

Submission: Prospective authors are invited to submit an extended abstract of two to three A4 pages. There is no specific template. Abstracts should be submitted directly to the special session organizer via email: yang.hui@nuaa.edu.cn, dawei.liang@hit.edu.cn, yali@ahu.edu.cn, lwei@nimte.ac.cn and ruitu@njit.edu.cn.

Deadlines:	July 05, 2026	Abstract submission
	July 15, 2026	Provisional Acceptance
	July 31, 2026	Full paper submission
	August 15, 2026	Final acceptance