

Special Issue

Thermal Management and Energy Recovery Systems for Vehicle Batteries

Message from the Guest Editors

The rapid growth of electric vehicles (EVs) and hybrid electric vehicles (HEVs) has intensified the demand for advanced battery technologies that ensure safety, efficiency, and sustainability. Effective thermal management and energy recovery systems are critical for optimizing battery performance, extending lifespan, and mitigating thermal runaway risks. This Special Issue aims to explore cutting-edge advancements in thermal management strategies and energy recovery mechanisms for automotive batteries. Topics of interest include (but are not limited to) the following:

- Novel thermal management systems (e.g., liquid cooling, phase-change materials, heat pipes);
- Energy recovery technologies for waste heat utilization;
- Battery thermal modeling, simulation, and experimental validation;
- Integration of thermal management with vehicle energy efficiency;
- Materials and designs for enhanced thermal stability and energy recycling;
- AI-driven control systems for dynamic thermal regulation;
- Lifecycle analysis and sustainability of battery thermal systems.

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