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Applications of Electrical Machines in Modern Electric Vehicles: Current Developments and Future Perspectives

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Message from the Guest Editor

Electrical machines are the key technology in the forthcoming revolution of the transportation system, and the electric powertrain remains the final energy user and is responsible for vehicle performance and efficiency.

High-speed machines are being investigated to enhance the specific power of the powertrain, mainly where critical raw material such as rare earths are avoided due to costs and supply chain concerns. Design for high speed requires specific design steps and demands for high strength materials (electrical steels) and high-frequency operations in power converters.

In this scope, the topics of interest for this Special Issue, but are not limited to:

- Electrical machine design and control for EV application
- Powertrain integration and high speed operations
- Electrical machine cooling aspects
- Electric motor with reduced critical materials
- New materials for electrical machines
- Application of multiphase motors in EV
- Electrical machines under regenerative braking operation
- Designing for mass production

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Message from the Editor-in-Chief

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