Battery Management System for Future Electric Vehicles

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Message from the Guest Editors

The main performance parameters of electric vehicles (EVs) include size, cost, charging time, energy consumption, and efficiency. Evaluating the influence of charging–discharging pattern on battery usage, performance, safety, and life is vital. The primary tasks of battery management systems (BMS) include ensuring safety and reliability by accurate state estimation and monitoring, extending end of life (EoL) by minimizing aging, fault detection and alarm, and thermal management. For future EV-generations, detailed real and virtual cell level monitoring and control will be relevant. Optimization to extend battery life, while also providing maximum usability, will be considered. Management of battery temperature particularly during fast charging will also be needed.

This Special Issue aims to address the
- recent developments in battery modeling
- parameter estimation
- prediction of remaining useful life
- and related control algorithms for power, lifetime, and thermal management.

Contributions related to charging approaches and innovative hybridization concepts to assist, protect, and/or extend the battery life and/or performance will also be encouraged.

Special Issue

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Message from the Editor-in-Chief

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