Special Issue

Thermal Management Optimization and Performance Improvement of Batteries

Message from the Guest Editors

Enhancing the lifecycle involves exploring innovative technologies in battery construction and/or optimizing their operational conditions. Achieving this requires a profound understanding of battery modelling and parameter estimation. These models can properly control the battery operating conditions, ensuring batteries work inside their safe and optimal operating range, limit their degradation, and increase their performance. In particular, the management of the thermal aspect of batteries is crucial for preventing overtemperatures, limiting temperature degradation and possible consequent thermal runaway. The latter can be very dangerous as it can lead to combustion and explosions. Moreover, the thermal battery management system can be useful for balancing the temperature among different battery cells or modules. This way, it is possible to equalize the thermal stress among cells/modules, ensuring uniform degradation and efficiency of the individual cells/modules. This Special Issue is to collect both original research works and review articles on battery models, with a particular focus on the thermal aspect, and their optimized control through battery management systems.

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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