Special Issue

Battery Energy Storage Management by Integrating Omni-Channel Information: Battery Physics, Machine Learning, Force/Thermal/Electrical/Gas Sensors

Message from the Guest Editors

High reliability and long life have always been the goal of battery energy storage technology. The deepening of battery physics research, the development of new machine learning algorithms and new sensor technologies have provided opportunities for a higher level of battery management system (BMS). State estimation and lifetime prediction can become more accurate and adapt to battery aging and a wider range of temperature and current rate. Fault diagnosis developed by means of big data and multi-source sensor fusion can detect and locate faults more timely and accurately. The identification of battery electrical and thermal abuse boundaries can provide a basis for battery safety and long life scheduling. To that end, the potential topics of this special issue include but are not limited to:

- Applications of multi-physics modelling in BMS;
- Applications of machine learning methods in BMS;
- Applications of novel force, thermal, electrical, and gas sensors in BMS;
- Optimal design and control of thermal management system;
- Optimal scheduling of energy storage battery system with the goal of extending service life.

Guest Editors

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Deadline for manuscript submissions

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Message from the Editor-in-Chief

Take the opportunity to publish your original scientific work or a review paper concerning battery materials, battery technology or battery application within this new open access journal. Along with material science, the journal also addresses engineering and multidisciplinary research topics, such as cell and system design or storage system integration. Publishing proffers visibility for the benefit of other experts and facilitates discussion of the research results within the field. You are invited to publish your work, read published papers and to participate in topical discussions.

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