

Special Issue

Materials for Electrochemical Energy Storage—Challenges and Opportunities

Message from the Guest Editor

With the rapid developments of portable electronics, electric vehicles, and electrical grids, electrochemical energy storage systems have attracted increasing interest due to their high energy density. However, new battery chemistries and materials are highly desired to meet the urgent demands of stable and safe energy storage systems. Recently, a lot of effects have been made to improve the electrochemical performance of aqueous and non-aqueous batteries, from material design to interface engineering. For battery degradation and safety issues, material failure is one of the root causes. Therefore, it is critical to develop in situ and ex situ characterization to explore the failure process of energy materials. In addition to experiments, multiscale modelling plays a pivotal role in revealing the underlying mechanisms of electrochemical reactions for advanced materials in energy storage systems.

Guest Editor

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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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