Special Issue

Electrode Innovations for High-Energy Battery Systems

Message from the Guest Editors

This Special Issue aims to highlight the latest innovations in electrode design, synthesis, characterization, and theoretical understanding to advance high-energy battery systems. Key topics include, but are not limited to, the following areas:

- Anode and cathode materials (e.g., lithium/sodium layered oxides, polyanionic compounds, organic cathodes, silicon, lithium metal, alloy-type, hard carbon for sodium-ion);
- Electrode and electrode–electrolyte interface engineering;
- Novel electrode preparation techniques;
- In situ/operando studies of electrode reactions and degradation mechanisms;
- Theoretical modeling and machine learning for next-generation electrode design.

We invite authors to submit original research articles, reviews, and perspectives that highlight recent progress and future directions. Together, the contributions will offer a comprehensive view of how electrode innovations are shaping the next generation of high-energy battery technologies across multiple dimensions of chemistry.

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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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