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## Challenges and Opportunities towards Lithium-Ion Batteries

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### Message from the Guest Editor

In the modern era of digital civilization, energy storage technologies are under pressure now more than ever to be cost-effective, reliable, and capable of increasing their energy density. In such scenarios, the use of LIBs, with their unmatched performance and their ability to continually increase their energy density, is the only avenue available for development. Despite several breakthroughs in LIBs, such as cation-disordered, several critical issues remain to be addressed for their improved future application. Two major concerns include driving range anxiety and thermal runaways.

Contributions on the following topics, among others, are invited for submission to this Special Issue:

- Designing better batteries for future applications;
- In situ/ex situ characterizations;
- Theoretical understanding of LIBs;
- Mitigating voltage/capacity fading;
- Designing novel materials based on theoretical understandings;
- Reviews/surveys/progress in LIBs;
- Opinions on the road map to future advances in LIBs;
- Finding opportunities in challenges to LIBs;
- Machine learning approaches to alleviate modern issues with LIBs;
- Pushing the limits of theoretical capacity limits to LIBs.



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# Special Issue



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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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