

## Special Issue

# Toward Next-Generation Rechargeable Lithium-Ion Batteries: Current Status and Future Prospects

### Message from the Guest Editor

For significant industrial areas such as electrified transportation, consumer electronics, and stationary energy storage, lithium batteries (including lithium-ion, lithium-sulfur, and lithium-air cells) are regarded as enabling technology. Therefore, it is crucial to develop next-generation rechargeable Li-ion batteries with higher energy densities, enhanced safety features, reduced costs, and longer cycle lives. In this Special Issue, we aim to address topics of interest including, but not limited to, the following:

- Novel LIB electrode materials;
- Replacing traditional liquid electrolytes—e.g., ionic liquids, high-salt-content electrolytes, and solid-state batteries;
- High-performance and functional separators;
- Advanced fabrication technologies;
- Performance improvement or mechanism under extreme environments or conditions;
- Advanced flexible lithium-ion batteries;
- Degradability or sustainability of lithium-ion batteries;
- New battery chemistry;
- Technologies and functionality of battery management system.

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### Guest Editor

Dr. Zhenzhen Wei

College of Textile and Clothing Engineering, National Engineering Laboratory for Modern Silk, Soochow University, Suzhou 215123, China

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### Deadline for manuscript submissions

closed (10 November 2025)



## Batteries

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*Batteries*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[batteries@mdpi.com](mailto:batteries@mdpi.com)

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### Message from the Editor-in-Chief

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### Editor-in-Chief

Prof. Dr. Karim Zaghib  
Department of Chemical and Materials Engineering, Concordia  
University, Montréal, QC H3G 1M8, Canada

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