Special Issue

Advances in Resource-Rich (Sodium/Magnesium/Zinc) Energy Storage Batteries

Message from the Guest Editors

The demand for sustainable, large-scale energy storage has positioned batteries based on earth-abundant elements (Na, Mg, and Zn) as vital alternatives to lithium-ion systems. Given their low cost and safety, these resource-rich batteries are essential for grid integration and next-generation devices. This Special Issue explores recent advances in Na-, Mg-, and Zn-based energy storage. We welcome research on material design, reaction mechanisms, and interfacial engineering, with an emphasis on structure–property relationships, energy density, and scalability. Our goal is to promote high-performance, eco-friendly battery technologies within the scope of Batteries.

- Na-ion Batteries: Electrode design and electrochemical mechanisms.
- Mg-based Batteries: Electrolytes and reversible plating/stripping.
- Zn-based Batteries (Zn-ion, Zn-air): Cathodes and reaction kinetics.
- Electrolytes: Solid-state and hybrid systems.
- Interface Engineering: SEI/CEI stability and ion transport.
- Advanced Characterization: Failure mechanisms and performance analysis.
- Modeling & Simulation: Multiscale performance prediction.
- Safety & Reliability: Thermal management and system safety.
- Sustainability: .....

Guest Editors

Dr. Jingdong Yang

1. Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, Chongqing, China
2. School of Civil Engineering, Chongqing Industry Polytechnic College, Chongqing 401120, China

Prof. Dr. Tianming Li

School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, China

Deadline for manuscript submissions

Batteries

an Open Access Journal by MDPI

Impact Factor 6.3
CiteScore 9.8

mdpi.com/si/271174

Batteries
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
batteries@mdpi.com

mdpi.com/journal/batteries

Batteries

an Open Access Journal by MDPI

Impact Factor 6.3
CiteScore 9.8

mdpi.com/journal/batteries

About the Journal

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.

Editor-in-Chief

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

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q1 (Electrochemistry) / CiteScore - Q1 (Electrical and Electronic Engineering)