Special Issue

High-Safety Lithium-Ion Batteries: Basics, Progress and Challenges

Message from the Guest Editor

The ongoing "endurance mileage" anxiety has stimulated the energy-density increase of lithium-ion batteries, and great efforts have been made in understanding the inherent electrochemistry, and in developing advanced material systems. However, the energy density increase of LIBs inevitably accompanies the rising safety concerns. Thermal safety characteristics and thermal runaway mechanism investigations of LIBs are continuing to attract widespread interest. Deciphering the thermal failure route, behavior and mechanism of high energy density is of great importance in building next-generation batteries with enhanced safety. Potential topics include, but are not limited to:

- Understanding heat generation characteristics during charge/discharge under isothermal or adiabatic situations.
- Thermal runaway route and mechanism of highenergy-density batteries.
- Simulation and modeling of self-heating of batteries during abuse conditions.
- Material-level investigation of the exothermic reaction during the thermal runaway chain reactions.
- New battery architectures or advanced electrodes or electrolyte materials to improve the thermal safety of batteries.

Guest Editor

Dr. Lang Huang

Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, Qingdao 26101, China

Deadline for manuscript submissions

closed (20 August 2025)



Batteries

an Open Access Journal by MDPI

Impact Factor 4.8 CiteScore 6.6



mdpi.com/si/199732

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 4.8 CiteScore 6.6



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 - Q2 (Electrochemistry) / CiteScore - Q1 (Electrical and Electronic Engineering)

