



*batteries*



an Open Access Journal by MDPI

## High-Performance Metal-Chalcogen Batteries

Guest Editors:

**Dr. Long Zhang**

School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

**Prof. Dr. Xingxing Gu**

Chongqing Key Laboratory of Catalysis and New Environmental Materials, College of Environment and Resources, Chongqing Technology and Business University, Chongqing 400067, China

**Prof. Dr. Lei Dong**

School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an 710072, China

Deadline for manuscript submissions:

**closed (13 January 2023)**

### Message from the Guest Editors

Lithium-sulfur batteries (LSBs) have become attractive candidates for the next generation of energy storage in the past few decades, owing to their ultrahigh theoretical energy density as well as the low cost and eco-friendliness of sulfur. Inspired by the achievements of LSBs, more metal-chalcogen batteries (MCBs) that are also based on multi-electron redox reactions have sprung up. We know that the challenges encountered in the development of LSBs are mainly the shuttle effects of reaction intermediates (lithium polysulfides), the sluggish kinetics of multistep and multiphase reaction behaviors, and the dendrite formation and interfacial corrosion of Li metal anodes. These issues also exist in MCBs. Solving these problems in better ways is the key to promoting the commercial application of MCBs.

This Special Issue will present the current status of MCBs, propose strategies to solve the above problems, explore the internal mechanism of improving the performance of MCBs, and ultimately provide a direction to guide the further application and development of MCBs.



[mdpi.com/si/105883](https://mdpi.com/si/105883)

# Special Issue



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Karim Zaghib**

Department of Chemical and  
Materials Engineering, Concordia  
University, Montréal, QC H3G  
1M8, Canada

## 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.

## 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](#), [CAPus / SciFinder](#), and [other databases](#).

**Journal Rank:** JCR - Q2 (Electrochemistry) / CiteScore - Q1 (Electrical and Electronic Engineering)

## Contact Us

---

Batteries Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/batteries](http://mdpi.com/journal/batteries)  
[batteries@mdpi.com](mailto:batteries@mdpi.com)  
[X@batteriesmdpi](#)