

## Special Issue

# Multifunctional Electrode Materials for Sustainable Energy Storage Devices

### Message from the Guest Editors

This Special Issue focuses on the cutting-edge research and recent advancements in the field of energy storage systems, specifically targeting various metal-ion batteries, supercapacitors, etc. Metal-ion batteries, challenges such as performance degradation and safety issues remain to be addressed. Supercapacitors, their relatively low energy density limits broader application. This Special Issue aims to collect the latest research findings in these areas, including material design, performance optimization, mechanism studies, and application prospects. It seeks to explore the current technical challenges and future development directions, providing both theoretical foundations and practical guidance for the advancement of energy storage technologies. Potential topics include, but are not limited to, the following:

- Electrochemical reactions;
- Surface/interface chemistry;
- Electrode materials design;
- Electrolyte design;
- Flexible batteries and supercapacitors;
- Batteries and supercapacitors at extreme working temperatures.

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### Guest Editors

Prof. Dr. Xiang Wu

School of Materials Science and Engineering, Shenyang University of Technology, Shenyang 110870, China

Dr. Depeng Zhao

Department of New Energy Materials and Devices, Shenyang Institute of Engineering, Shenyang 110136, China

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### Deadline for manuscript submissions

closed (20 April 2026)



## 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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Prof. Dr. Karim Zaghib

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

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