Special Issue

Challenges, Progress, and Outlook of High-Performance Fuel Cells

Message from the Guest Editors

As a strategic energy option, fuel cells offer high energy efficiency, low- or zero-emission operation, making them an ideal candidate. However, with the increasing cost constraints, the development of high-performance fuel cells is at the forefront of modern energy research. This Special Issue calls for original and innovative research and review papers addressing high-performance fuel cells, including the exploration of novel materials, the enhancement of electrochemical performance, as well as the improvement of safety and stability. The scope of this Special Issue includes, but is not limited to, the following:

- Exploration of new catalyst materials for fuel cells;
- Design optimization of electrodes for enhanced fuel cell performance;
- Investigation of the heat and mass transfer in fuel cells;
- Innovative manufacturing processes for cost-effective fuel cells;
- Performance analysis of fuel cells under extreme operating conditions;
- Improving the durability of fuel cell membranes;
- Application of AI in fuel cell design and control;
- Digital twinning or big data analytics of complex heat and mass transfer processes in fuel cell
- .....

Guest Editors

Prof. Dr. Jie Liu

Department of Mechanical, Electronic and Control Engineering, Beijing Jiaotong University, Beijing 100044, China

Dr. Pu He

Key Laboratory of Thermo-Fluid Science and Engineering of MOE, School of Energy and Power Engineering, Xi'an Jiaotong University, Xi'an 710049, China

Deadline for manuscript submissions

15 September 2025

Batteries

an Open Access Journal by MDPI

Impact Factor 4.8
CiteScore 6.6

mdpi.com/si/231044

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

mdpi.com/journal/batteries

MDPI

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)