Special Issue

Electrochemical Materials and Devices for Energy Conversion and Storage

Message from the Guest Editors

With the rapid development of society, the overuse of coal, oil, diesel, and other non-renewable energy resources results in the extreme shortage of traditional fossil fuel. To address this issue, the conversion and storage technologies of electrochemical energy, such as electrochemical capacitors/batteries and fuel cells, have received extensive attention based on their distinguishing properties, e.g., energy/power densities, cyclability, and efficiencies.

This Special Issue aims at covering recent progress and new developments in electrochemical materials and devices for energy conversion and storage, including, but not limited to, the following topics:

(1) the precise synthesis and design methods of electrochemical materials;
(2) advanced characterization techniques, especially operando/in situ spectroscopy technology;
(3) theoretical calculations for electrocatalysts and electrode materials;
(4) advanced electrolytes and membranes for electrochemical energy conversion and storage devices;
(5) low-/non-platinum electrocatalyst for low-temperature fuel cells;
(6) Advanced materials for supercapacitors;
(7) Review articles that describe the current state of the art.

Guest Editors

Dr. Bang-An Lu
College of Materials Science and Engineering, Zhengzhou University, Zhengzhou, China

Dr. Yuanhui Cheng
College of Chemical Engineering, Beijing University of Chemical Technology, Beijing, China

Deadline for manuscript submissions

closed (20 January 2025)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/142115

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

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, 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), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)