







an Open Access Journal by MDPI

# **Emerging Materials and Systems for Electrochemical Energy Storage Application**

Guest Editors:

## Prof. Dr. Dongfeng Xue

Multiscale Crystal Materials Research Center, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, China

## Prof. Dr. Kunfeng Chen

State Key Laboratory of Crystal Materials, Institute of Crystal Materials, Shandong University, Jinan 250100, China

#### Prof. Dr. Feng Liang

Faculty of Metallurgical and Energy Engineering, Kunming University of Science and Technology, Kunming 650093, China

Deadline for manuscript submissions:

closed (20 October 2022)

# **Message from the Guest Editors**

Dear Colleagues,

Rechargeable metal-ion-based energy storage cells (lithium, sodium, potassium, magnesium, calcium, aluminum, zinc, manganese-ion batteries, their dual-ion batteries and capacitors) have been attracting enormous attention from the research community because these ion cells may be able to meet various challenges faced by human society in multiple applications. In these emerging ion-based systems, their performances may be worsened by a variety of undesired complications, including insufficient initial content of ions in a cell, poor initial coulombic efficiencies of electrode materials, loss of ions during long-term cycling, and the lack of practical possibility to optimize potential ranges in negative and positive electrodes. The intent of this Special Issue is to encourage the community to deepen physical and chemical understanding at both materials and systems levels for a broad range of metal-ion-based energy storage cells and provide an up-to-date overview of this emerging field.

It is our pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.



Specialsue









an Open Access Journal by MDPI

## **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

# **Message from the Editor-in-Chief**

Materials (ISSN 1996-1944) was launched in 2008. The iournal covers twenty-five comprehensive biomaterials, energy materials, advanced composites. advanced materials characterization, porous materials, manufacturing processes and svstems. 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.

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

#### **Contact Us**

Materials Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/materials materials@mdpi.com X@Materials\_Mdpi