

## Special Issue

# Next-Generation Materials for Energy Storage

### Message from the Guest Editors

This Special Issue of *Materials* focuses on innovative developments in semiconductors, metals, ceramics, polymers, nanostructures, and heterostructures, all of which play a key role in next-generation energy storage systems. We invite contributions that explore the design, synthesis, characterization, and application of these materials in solid-state batteries, thermal storage, passive cooling, hybrid systems, and other related fields. Topics of interest include:

- Semiconductors: materials for ion and electron transport;
- Metals: high-capacity electrodes and redox-active components;
- Ceramics: solid electrolytes and phase-change storage media;
- Polymers: flexible, lightweight, and chemically stable systems;
- Nanostructures: materials with enhanced surface area and fast kinetics;
- Heterostructures: multifunctional architectures with synergistic properties;
- Interface engineering and studies on degradation and long-term stability.

This issue aims to highlight how materials innovation underpins technological progress in energy storage. We welcome original research articles, reviews, and perspectives—especially those that connect fundamental insights with real-world applications.

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### Guest Editors

Dr. Jipeng Fei  
Dr. Roberto Lopez  
Dr. Antonio Coyopol

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### Deadline for manuscript submissions

20 October 2026



## Materials

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## About the Journal

### Message from the Editorial Board

*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.

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