

Special Issue

Future of Metals and Their Compounds for Metal Batteries –Material Design and Performance Optimization

Message from the Guest Editors

The emerging demand for electronics and transportation technologies is driving the development of rechargeable batteries with enhanced capacity storage. Multivalent metals (zinc, magnesium and aluminum) are compatible with non-flammable aqueous electrolytes and are less reactive when exposed to the ambient atmosphere, thus enabling safer potential battery systems. Metal batteries have recently attracted considerable interest as promising alternatives for future large-scale energy storage devices. However, issues such as energy storage capacity and structural stability of metal compounds, diffusion kinetics of electrolyte ions, metal electrode dendrites, chemical corrosion, etc. limit the further application of metal batteries. In this special issue, we welcome articles focusing on battery material preparation methods and their impact on final product performance, including metal electrode treatment, electrolyte optimization, synthesis of metal compound cathode materials, and final performance analysis.

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About the Journal

Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editors-in-Chief

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