

## Special Issue

# Optimization of Electrode Materials for Zinc Ion Batteries

### Message from the Guest Editor

This Special Issue aims to highlight the latest advances in the design, synthesis, and performance enhancement of electrode materials for aqueous and non-aqueous zinc-ion batteries (ZIBs). As the demand for safe, sustainable, and cost-effective energy storage solutions grows, ZIBs have emerged as promising alternatives to lithium-ion batteries, particularly for large-scale applications such as electrified transportation and grids. However, challenges such as their limited electrochemical stability and slow ion diffusion and the structural degradation of electrode materials hinder their practical deployment.

The scope of this Special Issue encompasses cutting-edge research on cathode materials (e.g., layered oxides, vanadium-based compounds, Prussian blue analogs), anode stabilization techniques (dendrite suppression and protective coatings), and electrolyte formulations (aqueous, quasi-solid-state). We aim to highlight advanced characterization techniques, such as in situ spectroscopy and computational modeling, that can be utilized to provide insights into reaction mechanisms, ion transport dynamics and failure modes.

### Guest Editor

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### Message from the Editor-in-Chief

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