Special Issue

Advanced Electrode Materials for Aqueous Batteries

Message from the Guest Editor

Aqueous batteries have emerged as a cornerstone for safe and sustainable energy storage, leveraging non-flammable electrolytes and cost-effective manufacturing. Despite their advantages, challenges such as limited energy density and life cycles persist, driven by the inherent limitations of electrode materials. Recent advancements highlight the potential of innovative material design to overcome these barriers, enabling high-performance aqueous battery systems. This Special Issue focuses on advanced electrode materials for aqueous batteries, inviting original research and reviews on novel synthesis methods, material architectures, and mechanistic studies. Topics include nanostructured/composite materials, surface/interface engineering, ion storage mechanisms, and strategies to enhance electrochemical stability and conductivity. Submissions exploring Li/Na/Zn-ion, multivalent-ion, and hybrid aqueous batteries are encouraged, alongside computational insights guiding material development.

Guest Editor

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