The role of zinc-based flow batteries

Here, we developed a liquid metal (LM) electrode that evolves the deposition/dissolution reaction of Zn into an alloying/dealloying process within the LM, thereby achieving extraordinary ...

This work offers insights into controlling water transport behaviors for realizing long-life flow batteries.

This study breaks the solid-liquid working mode of the Zn anode, offering an effective solution for LDES applications with Zn-FBs. A liquid metal electrode enables dendrite-free, zinc-based flow batteries ...

In this perspective, we first review the development of battery components, cell stacks, and demonstration systems for zinc-based flow battery technologies from the perspectives of both ...

Considering recent developments, this mini review analyzes the formation mechanism and growth process of zinc dendrites and presents and ...

Zinc-based batteries, particularly zinc-hybrid flow batteries, are ...

This review discusses the latest progress in sustainable long-term energy storage, especially the development of redox slurry electrodes and their significant effects on the performance ...

Zinc-iodine flow batteries (ZIFB) have emerged as one of the most promising technologies for next-generation grid-scale energy storage systems due to their advantages, which ...

Aqueous zinc-based flow batteries (ZFBs) represent one of the most promising energy storage technologies benefiting from their high safety and ...

This review provides a mechanism-oriented overview of electrolyte additives in zinc-based redox flow batteries, highlighting their multifunctional roles, including Zn 2+ solvation ...

The role of zinc-based flow batteries