
In this study, we established a comprehensive two-dimensional model for single-flow zinc-nickel redox batteries to investigate electrode reactions, current-potential behaviors, ...

Herein, we develop a tailored ionic-molecular sieve membrane to regulate the transport behaviors of water/hydrated ion clusters, enabling the electrolyte balance by precise ...

Abundant and relatively benign elements (zinc and iodine). Iodine-based catholytes offer high reversibility and stability. EcoMat, 2025, under ...

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

A zinc-air flow battery integrated with a zinc electrolyzer shows great promise as an electricity storage system due to its high specific energy density at low cost. A ...

The zinc-bromine flow battery (Zn-Br 2) was the original flow battery. [6] John Doyle file patent US 224404 on September 29, 1879.

In this review, the focus is on the scientific understanding of the fundamental electrochemistry and functional components of ZBFBs, with an emphasis on the technical ...

Abstract Neutral zinc-iron flow batteries (ZIFBs) remain attractive due to features of low cost, abundant reserves, and mild ...

Herein, we develop a tailored ionic-molecular sieve membrane to regulate the transport behaviors of water/hydrated ion clusters, ...

As a hybrid flow battery, the areal capacity is a very important parameter for ZBFBs, especially considering their development for long-term and large-scale energy storage ...

In flow batteries, the electrolyte is stored in external tanks and circulated through the cell. This study provides the requisite experimental data for parameter estimation as well as model ...

The zinc-bromine flow battery (Zn-Br 2) was the original flow battery. [6] John Doyle file patent US 224404 on September 29, 1879. Zn-Br2 batteries have relatively high specific energy, and ...

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