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Here, the authors design an aqueous iron-cerium redox flow battery using a universal complexing agent that enhances stability and efficiency, achieving long cycle life and ...

Ion migration is driven by combined effects of potential difference, concentration gradient, and osmotic pressure. In the initial stage, ion diffusion delays capacity decay, while ...

In this article, I will introduce the evaluation approach of ion dynamics and the evaluation results of mobility and interactive situations of carrier ions ...

Herein, we propose to formulate an asymmetric redox flow battery to compensate ion migration by the addition of extra solute to the catholyte as a simple strategy to restrict ...

This insight highlights the essential similarity in the migration behavior of ions in both electrolytes and electrodes, emphasizing the importance of understanding and optimizing ...

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

To improve the flow mass transfer inside the electrodes and the efficiency of an all-iron redox flow battery, a semi-solid all-iron redox flow battery is presented experimentally.

These frameworks are meticulously engineered to optimize ion migration pathways within zinc batteries, promoting rapid ion transport and consistent zinc deposition.

A fundamental description of ion transport in flow-battery separators can guide the development of new separators by identifying the nature of ion selectivity under given conditions.

A new advance in bromine-based flow batteries could remove one of the biggest obstacles to long-lasting, affordable energy storage. Scientists developed a way to chemically ...

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