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Ion migration in flow batteries



Ion migration in flow batteries



Transport phenomena in flow battery ion-conducting membranes

Selectively tuning ion transport through redox flow battery separators is a promising approach toward increasing cell capacity, power density, and, ultimately, economic feasibility. ...

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Long-life aqueous zinc-iodine flow batteries enabled by

Aqueous zinc-iodine flow batteries show potential in large-scale storage but face water imbalance-induced instability. Here, authors develop a tailored ionic-molecular sieve membrane that



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Traditional and Iterative Group-IV Material Batteries through Ion Migration

In this review, we emphasize the significant potential of carbon group element-based (Group-IV) electrochemical energy devices prepared on the basis of ion migration in the realm of ...

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Ion Migration-Induced Capacity Evolution in Iron-Chromium Redox Flow

This article focuses on the iron-chromium redox flow batteries (ICRFBs), systematically investigating the effects of different states of charge (SOCs) on electrolytes, the correlation between detection ...



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Ion Transport in Solid Medium--Evaluation of Ionic Mobility for ...

This study, which emphasized the importance of evaluating the interactions between the carrier ions and solid media in batteries, must continue to the evaluation of ion intercalation into the electrodes and ...

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Developing low-resistance ion migration pathways using ...

Rechargeable aqueous zinc metal-based batteries present a promising alternative to conventional lithium-ion batteries due to their lower operating potentials, higher capacities, intrinsic ...



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Ion Migration-Induced Capacity

Evolution in Iron-Chromium Redox Flow



This study on iron-chromium redox flow batteries reveals that ion migration, propelled by potential differences, concentration gradients, and osmotic pressure, enriches iron ions in the ...

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Suppressing water migration in aqueous Zn-iodide flow batteries ...

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 water migration.

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Capacity balancing for vanadium redox flow batteries through

The vanadium redox flow battery (VFB) is an attractive storage technology for large-scale storage applications because of its decoupled power and energy rating. As for almost all ...

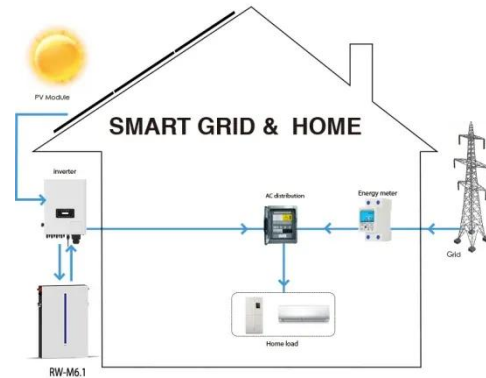
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Fast and Selective Ionic Transport: From Ion-

Conducting Channels to Ion

This review discusses selective and fast transport of ionic species (ions and their associates) through systems as diverse as ion-conducting transmembrane proteins and ion exchange membranes (IEMs) ...

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