A liquid metal flow battery

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 ...

Flow is an important phenomenon in liquid metal batteries, and its generation mechanism is also diverse. Flow can be triggered by temperature fields, electromagnetic fields, or concentration ...

On the basis of fusible alloys, liquid metal batteries with a long cycle life and high energy and power are emerging as a promising energy system for broad applications beyond stationary ...

Liquid metal batteries (LMBs) are a particular grid-scale storage technology that comes with interesting fluid mechanical challenges. Like any battery, a liquid metal battery discharges by ...

A novel liquid metal flow battery using a gallium, indium, and zinc alloy (Ga 80 In 10 Zn 10, wt.%) is introduced in an alkaline electrolyte with an air electrode.

These batteries store an electron donating fluid and an electron absorbing fluid in separate, large tanks and can flow the fluids together for a chemical reaction that produces electrical ...

With an intrinsic dendrite-free feature, high rate capability, facile cell fabrication and use of earth-abundance materials, liquid metal batteries (LMBs) are regarded as a promising solution to ...

Liquid metals (LMs) have emerged as promising materials for advanced batteries due to their unique properties, including low melting points, high electrical conductivity, tunable surface ...

Liquid metal flows are important for many industrial processes, including liquid metal batteries (LMBs), whose efficiency and lifetime can be affected by fluid mixing. We experimentally investigate flows ...