

Request PDF | Simultaneous Manipulation of Electric Double Layer and Zn (100) Deposition Enabled by Anions for Highly Stable Zn Anodes | Controlling the growth orientation of zinc (Zn) ...

Aqueous Zn||I₂ battery offer an economical and safe energy storage solution yet face detrimental parasitic reactions at both electrode interfaces. Here, authors develop zwitterion-mediated ...

Fast charging of high-energy batteries is limited by electrolyte instability under rising overpotential. A self-adaptive electrolyte overcomes this by dynamically expanding its stability window ...

Aqueous aluminum metal batteries (AAMBs) have garnered significant attention due to the abundant reserves, low cost, high theoretical capacity, and intrinsic safety of aluminum (Al). ...

Aqueous zinc-manganese oxide (Zn-MNO) batteries represent a compelling solution for grid-scale energy storage due to their inherent safety, cost-effectiveness and ecological compatibility. ...

This work offers a strategy for in-situ observation and analysis of Zn dendrite formation mechanisms and provides an effective approach for designing high-performance Zn-ion batteries.

Highlights o DDA-Cu offered a high initial discharge capacity of 249.58 mAh g⁻¹ at 0.2 A g⁻¹. o Zn@DDA-Cu anode significantly extended battery lifespan for over 3500 h at 0.5 mA cm⁻². o ...

In contrast, the Zn||Cu battery with ZnSO₄ electrolyte experienced a short-circuiting process after only 140 cycles (Figure S20). This result further verified the improvement effect of PCNG ...

When applied as a zinc-air battery cathode, it achieved an open-circuit voltage of 1.53 V, a peak power density of 168.1 mW/cm², a specific capacity of 720.5 mA·h·g⁻¹, and exceptional ...

The fragile dendrites easily trigger the "dead Zn" formation, and subsequent disconnection from the electrode, resulting in a reduced battery capacity. More seriously, when the uncontrolled ...

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Aqueous rechargeable Zn-CO₂ batteries are emerging as a promising technology for sustainable energy storage and carbon dioxide (CO₂) utilization, owing to their high safety, theoretical ...

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Rechargeable zn cu battery

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