

achieving the cycle for maximized ...

Li₂S, a fully lithiated state of sulfur cathode with high capacity, is promising for lithium sulfur battery or lithium ion battery. To further decrease the cost and improve the utilization, single atomic Co catalyst is synthesized and embedded in inexpensive converted-Li₂S nanocomposite. Theoretical simulations and electrochemical measurements demonstrate ...

Zn metal batteries (ZMBs) have been regarded as one of the promising candidates for large-scale energy storage devices, because of its low cost, desirable chemical inertness in air, excellent specific capacity (820 mA h g⁻¹), and the low potential (-0.76 V vs. SHE) of Zn metal [1]. Water-based electrolytes are usually employed in ZMBs for their merits of ...

Zn-ion batteries. A Zn-ion battery consists of four components, a Zn metal anode, a metal oxides cathode, a separator, and an electrolyte. Generally, metal oxides are used as cathode materials in Zn-ion batteries, including manganese-based, vanadium-based, and Prussian blue analogs and organic cathode materials [12,31]. The characteristics of some ...

The electrode is composed of a hydrophobic MnS layer decorated with Ni-Co-S nanoclusters that allows for smooth gas diffusion and efficient oxygen electrocatalysis and a hydrophilic Ni_xCo_{1-x}S₂ layer that favors fast ionic transfer and superior performance for energy storage. The battery with the function-separated electrode shows a ...

1 Introduction. To maintain the economic growth of modern society and simultaneously suitability of the Earth, it is urgent to search new and clean energy sources, and also improve the utilization efficiency of the primary energy sources. 1, 2 All the clean energy obtained from nature, such as solar, tidal, geothermal, and wind powers, need be converted ...

With the increasing demand for energy storage in portable electronic devices, large-scale grid, electric vehicles, and hybrid electric vehicles, rechargeable batteries have been widely studied and developed. 1 At present, the zinc-air battery (ZAB) has attracted great attention for its broad application prospects, as Zn is available at a global ...

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