

High-entropy materials, especially high-entropy alloys and oxides, have gained significant interest over the years due to their unique structural characteristics and correlated ...

Single phased, high-entropy materials (HEMs) have yielded new advancements as energy storage materials. The mixing of manifold elements in a single lattice has been found to induce synergistic effects leading to superior ...

Energy storage devices play an important role in our daily lives. As a kind of new materials, high-entropy alloys (HEAs) avoid the traditional "base element" concept and display ...

High entropy materials have garnered considerable attention recently as a class of materials with intricate stoichiometry, exhibiting high levels of entropy. These materials hold great promise as candidates for ...

This study compares the electrochemical performance of high-entropy alloys (HEA) and oxides (HEO) as supercapacitor electrodes. HEO demonstrates superior energy and power density due to its capacitive behavior ...

The growing demand for advanced electrochemical energy storage devices highlights challenges in battery materials, such as limited storage sites, slow ion/electron ...

Herein, we provide a comprehensive review of this new class of materials in the energy field. We begin with discussions on the latest reports on the applications of high-entropy materials, including alloys, oxides and other ...

High entropy materials, a horizon-broadening class of materials with complex stoichiometry, have gained significant interest recently. The ideal regulation and the attractive synergy effect make high entropy ...

Perspectives of high entropy alloys as hydrogen storage materials For most of the practical applications of hydrogen storage materials, we need materials with high gravimetric ...

Herein, we provide a comprehensive review of this new class of materials in the energy field. We begin with discussions on the latest reports on the applications of high-entropy materials, including alloys, oxides and other entropy-stabilized ...

Abstract High entropy alloys (HEAs) have attracted substantial attention in diverse fields, including hydrogen storage, owing to their unique structural and functional properties. The diverse components of HEAs have ...

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The sluggish conversion reaction and uncontrolled dendrite growth inhibit the development of rechargeable metal batteries with high energy density and environmental ...

The review emphasizes that HEAs exhibit superior electrocatalytic activity, cycling stability, and durability compared to traditional noble metal catalysts, making them highly ...

Abstract High-entropy battery materials (HEBMs) have emerged as a promising frontier in energy storage and conversion, garnering significant global research interest. These ...

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