

Abstract. Sodium-ion batteries (SIBs) have attracted more and more attention for scalable electrical energy storage due to the abundance and wide distribution of Na resources. However, the anode still remains a great challenge for the application of SIBs.

In this review, the recent progress in heterostructure from energy storage fields is summarized. Specifically, the fundamental natures of heterostructures, including charge redistribution, built-in electric field, and associated energy storage mechanisms, are

Energy Storage Materials is an international multidisciplinary journal for communicating scientific and technological advances in the field of materials and their devices for advanced energy storage and relevant energy conversion (such as in metal-O₂ battery). It ...

Electrical energy storage (EES) is critical for efficiently utilizing electricity produced from intermittent, renewable sources such as solar and wind, as well as for electrifying the transportation sector.

Lithium-ion battery (LIB) technology is still the most mature practical energy-storage option because of its high volumetric energy density (600-650 Wh l⁻¹ for a typical cylindrical...

Novel electrode materials, with a high energy density at high power are urgently needed for realizing high-performance energy storage devices. The recent development in the field of 2D materials, including both graphene and other layered systems, has shown

The versatile chemistry of MXenes allows the tuning of properties for applications including energy storage, electromagnetic interference shielding, reinforcement for composites, water...

The PA anode material shows promising sodium storage performance demonstrated by prototype pouch cells with a practical energy density of 100 Wh kg⁻¹, good rate and cycling performance. Furthermore, the high safety of pouch cells with PA anode was also proved by a series of safety experiments.



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