

Zinc-air batteries deliver great potential as emerging energy storage systems but suffer from sluggish kinetics of the cathode oxygen redox reactions that render unsatisfactory cycling lifespan. The exploration on bifunctional electrocatalysts for oxygen reduction and evolution constitutes a key solution, where rational design strategies to ...

Hollow carbon spheres have garnered great interest owing to their high surface area, large surface-to-volume ratio and reduced transmission lengths. Herein, we overview hollow carbon sphere-based materials and their noble metal-free hybrids in catalysis. Firstly, we summarize the key fabrication techniques for various kinds of hollow carbon spheres, with a ...

The effect of doping with Co and Fe on the electrochemical performance of Ni δ /CPB has been systematically investigated through theoretical calculations and electrochemical performance tests. Density functional theory calculations confirm that double doping with Co and Fe can significantly reduce the energy barrier and bandgap of Ni δ /CPB, and promote the migration of ...

Article from the Special Issue on Selected papers from the 6th International Symposium on Materials for Energy Storage and Conversion (mESC-IS 2022); Edited by Ivan Tolj; Articles from the Special Issue on Advances in Hybrid Energy Storage Systems and Their Application in Green Energy Systems; Edited by Ruiming Fang and Ronghui Zhang

The Journal of Energy Storage focusses on all aspects of energy storage, in particular systems integration, electric grid integration, modelling and analysis, novel energy storage technologies, sizing and management strategies, business models for operation of storage systems and energy storage ... View full aims & scope \$

DOI: 10.1016/j.jallcom.2022.164672 Corpus ID: 247642564; Enhanced energy storage performances of (Sr_{0.7}Bi_{0.2})TiO₃ ceramics through highly polarized Ba ions @article{You2022EnhancedES, title={Enhanced energy storage performances of (Sr_{0.7}Bi_{0.2})TiO₃ ceramics through highly polarized Ba ions}, author={Weimin You and ...

Electrochemical energy storage technology is of critical importance for portable electronics, transportation and large-scale energy storage systems. There is a growing demand for energy storage devices with high energy and high power densities, long-term stability, safety and ...

Therefore, to achieve high energy storage performance via constructing flexible and high-dynamic polarization configurations in ferroelectric ceramics, the long-range polarization ordering and average symmetry need to be broken as much as possible so that the ceramics appear weak macroscopic polar [17], [19]. On the other hand, composition ...

On February 28, the "14th Five-Year Plan for Energy Development of Qinghai" was issued which pointed out the key tasks of energy development, including actively developing applications of ...

The mechanisms underpinning high energy storage density in lead-free $\text{Ag}_{1-3x}\text{Nd}_x\text{Ta}_y\text{Nb}_{1-y}\text{O}_3$ antiferroelectric (AFE) ceramics have been investigated. Rietveld refinements of in-situ synchrotron X-ray data reveal that the structure remains quadrupled and orthorhombic under electric field (E) but adopts a non-centrosymmetric space group, $\text{Pmc}2_1$, ...

These results indicated that the introduction of HECs broadened the scope of designing high energy storage performance systems, and the $0.9(0.75\text{BT}-0.25\text{NBT})-0.1\text{BZMASZ}$ ceramics with high energy storage density and excellent temperature stability has promising prospects for application in high temperature pulsed power systems.

Jiao Yang, Qichong Zhang, Zhixun Wang, Zhe Wang, Lixing Kang, Miao Qi, Mengxiao Chen, Wei Liu, Wenbin Gong, Weibang Lu, Perry Ping Shum, Lei Wei, Rational Construction of Self-Standing Sulfur-Doped Fe_2O_3 Anodes with Promoted Energy Storage Capability for Wearable Aqueous Rechargeable NiCo-Fe Batteries, *Advanced Energy ...*

Featured with an unmatched charge-discharge speed, dielectric energy storage capacitors enjoy the highest power density beyond all other energy storage devices including fuel cells, batteries, and supercapacitors, enabling them to be the vital electronic elements for pulsed power applications such as electromagnetic systems, medical defibrillators and hybrid electric ...

The DC-link propulsion system and energy management of the conventional solar powered UAV illustrated in Fig. 1(a) requires an energy storage system such as batteries for night flying or other low ...

Advanced Electrocatalysts with Single-Metal-Atom Active Sites *CHEMICAL REVIEWS* 120(21):12217 Nov 2020 Wang, Yuxuan; Su, Hongyang; He, Yanghua; Li, Ligu...

AgNbO_3 -based antiferroelectric ceramics have been actively studied for energy-storage applications, where numerous compositional modifications have been implemented to improve their energy-storage performance. In this work, Sm_2O_3 -doped AgNbO_3 ceramics were fabricated; the microstructure, dielectric property, and phase transition behavior were ...

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