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Biography Xiang Hao was born in Shaanxi, China, in 1987. He received the B.S. degree in electrical engineering from the Harbin Institute of Technology, Harbin, China, in 2009, and the M.S and Ph.D. degrees in electrical engineering from Xi'an Jiaotong University, Xi'an, China, in 2011 and 2014, respectively.

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 ...

Tongtong Shen, Hao Peng, Xiang Ling. Experimental Measurements and Thermodynamic Modeling of Melting Temperature of the Binary Systems n-C₁₁H₂₄-n-C₁₄H₃₀, n-C₁₂H₂₆-n-C₁₃H₂₈, n-C₁₂H₂₆-n-C₁₄H₃₀, and n-C₁₃H₂₈-n-C₁₅H₃₂ for Cryogenic Thermal Energy Storage. ... High-energy storage graphene oxide modified phase change ...

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Phase change materials with desirable light-thermal conversion ability are particularly attractive for solar energy harvesting and storage. Herein, we demonstrate that the combination of efficient light-thermal conversion, excellent thermal property, and reliability can be achieved via the construction of a novel form-stable phase change composite material, that is, ...

KEYWORDS: Metal-organic frameworks, Gas separation, Gas storage, Fuel gas, Membrane

INTRODUCTION Modern civilization requires energy to function, giving a worldwide energy consumption about 575 quadri l lion British thermal units (Btu, 1 Btu is about 1.055 kJ or 0.0003 kW- h) in 2015. 1 As

important energy sources and energy carriers,

Article from the Special Issue on Modern Energy Storage Technologies for Decarbonized Power Systems under the background of circular economy with sustainable development; Edited by Ruiming Fang and Ronghui Zhang ... Bing-Xiang Ji, Hong-Hao Liu, Peng Cheng, Xin-Yu Ren, ... Ling-Ling Li. Article 112093 View PDF. Article preview.

Journal of Energy Storage 64, 107167, 2023. 50: 2023: ... B Wu, AK Silaen, CQ Zhou, TS Fisher, A Shakouri. Energy conversion and management 84, 244-252, 2014. 40: 2014: A systematic study of the residual gas effect on vacuum solar receiver. ... M Hao, Z Huang, KR Saviers, G Xiong, SL Hodson, TS Fisher ...

The energy supply system is the key branch for fiber electronics. Herein, after a brief introduction on the history of smart and functional fibers, we review the current state of advanced functional fibers for their application in energy conversion and storage, focusing on nanogenerators, solar cells, supercapacitors and batteries.

Ni(OH)₂ nanosheet, acting as a potential active material for supercapacitors, commonly suffers from sluggish reaction kinetics and low intrinsic conductivity, which results in suboptimal energy density and long cycle life. Herein, a convenient electrochemical halogen functionalization strategy is applied for the preparation of mono/bihalogen engineered Ni(OH)₂ electrode ...

Polymer-based 0-3 composites filled with ceramic particles are identified as ideal materials for energy storage capacitors in electric systems. Herein, PVDF composite films filled with a small content (< 10 wt%) of BaTiO₃ (BT) were fabricated using simple solution cast method. The effect of BT content on the discharged energy density (U_{discharged}) of the ...

Hao Xiang. North China Electric Power University. JunTai Xing. Beijing Jiuzun Energy Technology Co., Ltd. Zeqiang Liu. North China Electric Power University ... environment-friendliness, and sustainability. Including solar collector, heat pump, energy storage equipment and drying chamber, the SAHPD system can be regarded as the integrated ...

The eCO₂ RR system cell structure can be summarized into two main categories, 1) two-chamber cell (2-C cell) and 2) GDE cell. Both kinds of CO₂ cell structures have the same mechanism of eCO₂ RR in which water is oxidized to O₂ at the anode, while CO₂ is reduced to carbon-based species at the cathode, and there is an ion exchange membrane ...

Two-dimensional (2D) transition metal oxide composited with graphene has attracted worldwide attention in the energy storage and conversation field. Here, a 2D rGO/NiO heterostructure film on ITO glass was designed and applied to electrochromic energy storage. The 2D heterostructure increases the interlayer spacing of the NiO-based films and the electrochemically active ...

The energy storage of EDLCs is via charge adsorption at the surface of the electrode without any faradaic reactions. 24, ... Hao Jiang received his Ph.D. degree in Materials Science and Engineering from East China University of Science and Technology (ECUST), China, in 2009. He then joined Temasek Laboratories, Nanyang Technological University ...

Author links open overlay panel Hao Qi, Xiang Wang, Hongshan Chen. Show more. Add to Mendeley. Share. Cite. ... -253 °C) storage methods, solid state storage of hydrogen is potentially superior with regard to safety, energy efficiency, and the storage capacity [[3], [4], [5]]. A practical storage system should be able to operate under ...

With the fast development of the power electronics, dielectric materials with high energy-storage density, low loss, and good temperature stability are eagerly desired for the potential application in advanced pulsed capacitors. Based on the physical principals, the materials with higher saturated polarization, smaller remnant polarization, and higher electrical breakdown field are the most ...

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