

Western University? - ??Cited by 5,572?? - ?Batteries? - ?MXene? - ?electrodeposition? - ?energy storage materials? - ?electrochemistry? ... Y Tian, C Wei, Y Tao, B Xi, S Xiong, J Feng, Y Qian. Nano Today 37, 101094, 2021. 127: 2021: Micron-sized nanoporous vanadium pentoxide arrays for high-performance gel zinc ...

Yujing Liu 1+, Xinyong Tao \*+, Yao Wang +, Chi Jiang 1, Cong Ma, Ouwei Sheng<sup>1</sup>, Gongxun Lu 1, Xiong Wen (David) Lou 2 \* High-energy density lithium (Li) metal batteries (LMBs) are ...

Aqueous Zn-ion energy-storage devices with metal Zn as anodes, including batteries and capacitors (ZIBs and ZICs), is largely hindered by dendritic growth and low coulombic efficiency since the side reactions between Zn anodes and electrolyte, originating from that targeted and efficient isolation of H<sub>2</sub>O and SO<sub>4</sub><sup>2-</sup> is extremely challenging. ...

Fangyu Xiong received his B.S. degree in Material Physics from Wuhan University of Technology in 2016. He is currently working toward the Ph.D. degree and his current research interests focuses on electrode materials for emerging energy storage devices.

Electrochemical energy storage is a promising route to relieve the increasing energy and environment crises, owing to its high efficiency and environmentally friendly nature. However, it is still challenging to realize its widespread application because of unsatisfactory electrode materials, with either high cost or poor activity and new ...

Inspired by the concept of the Li-N<sub>2</sub> battery, which uses the interconversion between N<sub>2</sub> and Li<sub>3</sub>N for energy storage<sup>19,20,21,22</sup>, we propose a cascade electrosynthesis strategy for ...

Metal-organic frameworks (MOFs) have been widely adopted in various fields (catalysis, sensor, energy storage, etc.) during the last decade owing to the trait of abundant surface chemistry, porous structure, easy-to-adjust pore size, and diverse functional groups. However, the limited active sites and the poor conductivity hinder the relative practical application. 2D MOFs can ...

3 &#0183; Over the last decade, there has been significant effort dedicated to both fundamental research and practical applications of biomass-derived materials, including electrocatalytic ...

?Chongqing University? - ??Cited by 6,570?? - ?Energy Storage? - ?Batteries? - ?Electrochemistry? ... F Xiong, Q An, L Xia, Y Zhao, L Mai, H Tao, Y Yue. Nano Energy 57, 608-615, 2019. 97: 2019: VOPO<sub>4</sub> &#183; 2H<sub>2</sub>O as a new cathode material for rechargeable Ca-ion batteries. J Wang, S Tan, F Xiong, R Yu, P Wu, L Cui, Q An.

Introducing interlayer water between reduced graphene oxide (rGO) nanoplatelets can help align these nanoplatelets (). Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene is a 2D material with metallic conductivity, hydrophilicity, and strong mechanical properties (18-27) has been widely used to reinforce composites and prepare free-standing graphene-Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> sheets (26, ...

The rapid developments of the Internet of Things (IoT) and portable electronic devices have created a growing demand for flexible electrochemical energy storage (EES) devices. Nevertheless, these flexible devices suffer from poor flexibility, low energy density, and poor dynamic stability of power output during deformation, limiting their ...

A stable and dense active site of high-energy energy storage device was formed by conjugation coordination between hexaaminobenzene (HAB) and cobalt center through ...

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 ...

Thickening of electrodes is crucial for maximizing the proportion of active components and thus improving the energy density of practical energy storage cells. Nevertheless, trade-offs between electrode thickness and electrochemical performance persist because of the considerably increased ion trans ...

Ting Xiong. Department of Materials Science and Engineering, National University of Singapore, Singapore, 117573 Singapore. ... (ZIB) represents a crucial step toward building future large-scale green energy conversion and storage systems. Recently, significant progress has been achieved in the development of manganese-based oxides for ZIB via ...

Thickening electrodes is critical for maximizing the proportion of active components and thus improving the energy density of practical energy storage cells. Nevertheless, trade-offs between electrode thickness and electrochemical performance persist because of the considerably increased ion transport resistance of thick electrodes. Herein, we propose accelerating ion ...

DOI: 10.1016/j.egyai.2023.100268 Corpus ID: 258538777; Applications of AI in Advanced Energy Storage Technologies @article{Xiong2023ApplicationsOA, title={Applications of AI in Advanced Energy Storage Technologies}, author={Rui Xiong and Hailong Li and Quanqing Yu and Alessandro Romagnoli and Jakub Jurasz and Xiao-Guang Yang}, journal={Energy and AI}, ...

Electrochemical energy storage is a promising route to relieve the increasing energy and environment crises, owing to its high efficiency and environmentally friendly nature. However, it is still challenging to realize its ...

Among various applications, energy storage devices with high power and energy densities are intensively demanded for phase regulation of grid and electric vehicle application [7]. Therefore, it is urgent to develop suitable materials with fast kinetics for improving the electrochemical performances.

Beyond-lithium-ion batteries are promising candidates for high-energy-density, low-cost and large-scale energy storage applications. However, the main challenge lies in the development of suitable ...

Shenglin Xiong and Yitai Qian: Supervision. ... H. Li, Y. Tao, Z. Weng, Q.H. Yang, F. Kang. A corrosion-resistant and dendrite-free zinc metal anode in aqueous systems. *Small*, 16 (2020), Article 2001736, 10.1002/sml.202001736. View in Scopus ... Towards sustainable and versatile energy storage devices: an overview of organic electrode ...

DOI: 10.1016/j.seta.2024.103989 Corpus ID: 272802979; The state of charge predication of lithium-ion battery energy storage system using contrastive learning @article{Xiong2024TheSO, title={The state of charge predication of lithium-ion battery energy storage system using contrastive learning}, author={Yifeng Xiong and Ting He and Wenlong Zhu and Yongxin Liao ...

Bismuth (Bi)-based materials have been receiving considerable attention as promising electrode materials in the fields of electrochemical energy storage, due to their excellent physical and chemical properties. However, they suffer from large volume expansion and sluggish reaction kinetics, leading to rapid capacity degradation and inferior rate ...

DOI: 10.1016/j.renene.2024.121251 Corpus ID: 272279497; Effect of carbon capture on carbide slag-steel slag shape-stable phase change materials for thermal energy storage @article{Xiong2024EffectOC, title={Effect of carbon capture on carbide slag-steel slag shape-stable phase change materials for thermal energy storage}, author={Yaxuan Xiong and ...

Immobile polyanionic backbone enables a 900-mm-thick electrode for compact energy storage with unprecedented areal capacitance. Thickening electrodes is critical for maximizing the ...

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. ... Stable Sodium Storage. Yazhan Liang, Yazhan Liang. School of Chemistry, and Chemical Engineering, Shandong University, Jinan, 250100 China ... Shenglin Xiong. School of Chemistry, and Chemical Engineering ...

As a result, the BP-ASSA devices achieved outstanding electrochemical energy storage performance and delivered a high stack capacitance of 45.8 F g<sup>-1</sup> (13.7 F cm<sup>-3</sup>) at the scan ...

X Xiong, J Tao, S Chen, L Brandt. *Physics of Fluids* 27 (4), 2015. 67: 2015: ... Composition and strain engineered AgNbO<sub>3</sub>-based multilayer capacitors for ultra-high energy storage capacity. LF Zhu, L Zhao, Y

Yan, H Leng, X Li, LQ Cheng, X Xiong, S Priya. Journal of Materials Chemistry A 9 (15), 9655-9664, 2021. 52:

203.Hongrui Zhang, Guo Tian, Da Xiong Tao Yang, Shen Zhong Long Jin, Boling Lan, Lin Deng Shenglong Wang, Yue S un, Weiqing Yang\*, ... Hierarchically Divacancy Defect Building Dual-Activated Porous Carbon Fibers for High-Performance Energy-Storage Devices, Advanced Functional Materials, 2020, 30(39), 2002580. (IF = 16.836)

Green energy storage Green energy conversion -- Nitrogen fixations Efficient utilization of ammonia energy -- Fuel cells ... Tao Qian, Jie Xiong, Chenglin Yan. (2019) Updating the intrinsic activity of a single-atom site with a P-O bond for a rechargeable Zn-air battery. ACS applied materials & interfaces link pdf. Yawen Sun, Jinqiu Zhou ...

INTRODUCTION. Owing to their remarkable rate capability and long life span, supercapacitors are widely used for efficiently storing and delivering electrical energy, particularly at high rates [].However, current advances are limited by their unsatisfactory energy density [7,8] creasing the fraction of active materials in a cell through the fabrication of thick ...

Here, the state-of-the-art advances of the hydrogel materials for flexible energy storage devices including supercapacitors and rechargeable batteries are reviewed. In addition, devices with various kinds of functions, such as self-healing, shape memory, and stretchability, are also included to stress the critical role of hydrogel materials.

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