

I currently works at the State Key Laboratory of Powder Metallurgy, Central South University. My research interests include cathode materials and solid-state electrolytes for high performance ...

Jiahang Chen, Huichao Lu, Xuan Zhang, Yang Zhang, ... Jiulin Wang. Pages 387-394 View PDF. ... select article Corrigendum to "Significant increase in comprehensive energy storage performance of potassium sodium niobate-based ceramics via synergistic optimization strategy", energy storage materials 45 (2022) 861-868.

Polymer dielectrics with a high energy density and an available energy storage capacity have been playing an important role in advanced electronics and power systems. Nevertheless, the use of polymer dielectrics in harsh environments is limited by their low energy density at high temperatures. Herein, zirconium dioxide (ZrO<sub>2</sub>) nanoparticles were decorated ...

Prof. Dr. Jun Chen. Key Laboratory of Advanced Energy Materials Chemistry, Renewable Energy Conversion and Storage Center, College of Chemistry, Nankai University, Tianjin, 300071 P. R. China. ... Electrolyte chemistry is critical for any energy-storage device. Low-cost and sustainable rechargeable batteries based on organic redox-active ...

62. Luyin Yao, Biwei Wang, Yuchi Yang, Xiao Chen, Jianhua Hu, Dong Yang,\* Angang Dong.\* In situ confined-synthesis of mesoporous FeS<sub>2</sub>@C superparticles and their enhanced sodium-ion storage properties. Chem. Commun. 2019, 55, 1229-1232. 61.

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 ...

To achieve the ambitious goal of carbon neutrality, the development of electric vehicles (EVs) has become imperative. [1, 2] Lithium-ion batteries (LIBs) are the most widely used energy storage systems in EVs, considering its relative high energy/power density and long cycle life [3].However, range-anxiety and safety are often quoted among the main issues hindering ...

1 &#0183; Developing fast-charging lithium-ion batteries (LIBs) that feature high energy density is critical for the scalable application of electric vehicles. Iron vanadate (FVO) holds great ...

DOI: 10.1016/j.cej.2022.135055 Corpus ID: 246580230; Bi-Sn-In phase change material with low melting point and high cyclic stability for thermal energy storage and management

Rapid thermal energy storage and management is of great significance in the fields of energy utilization and sustainable thermal control. In present article, Bi-Sn-In phase change material with low melting point and high cyclic stability for rapid thermal energy storage and management was designed and prepared by static melting method, and thermal ...

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. ... Significantly, the sodium storage feasibility of carbon materials with abundant resource, low cost, nontoxicity and high safety has been confirmed, and extensive investigation have demonstrated that the ...

Lead-free dielectric ceramics can be used to make quick charge-discharge capacitor devices due to their high power density. Their use in advanced electronic systems, however, has been hampered by their poor energy storage performance (ESP), which includes low energy storage efficiency and recoverable energy storage density (Wrec). In this work, we ...

The next-generation energy storage devices are expected to be flexible, cost-effective, and high power storage devices to complement or replace rigid batteries and conventional capacitors for ...

Environmentally friendly lead-free dielectric ceramics have attracted wide attention because of their outstanding power density, rapid charge/discharge rate, and superior stability. Nevertheless, as a hot material in dielectric ceramic capacitors, the energy storage performance of  $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ -based ceramics has been not satisfactory because of their ...

Zn metal batteries (ZMBs) have been regarded as one of the promising candidates for large-scale energy storage devices, because of its low cost, desirable chemical inertness in air, excellent specific capacity ( $820 \text{ mA h g}^{-1}$ ), and the low potential ( $-0.76 \text{ V vs. SHE}$ ) of Zn metal [1]. Water-based electrolytes are usually employed in ZMBs for their merits of ...

Prof Chen Wei's Group, Surface and Interface Lab, National University of Singapore. Home; Research; Members ... Electrocatalysis for Energy Storage and Conversion B.Sc. Materials Science and Engineering: 2016, Hefei University of Technology, China ... Ms. Yang Yu Lu (Master by-course Student, 2011-2013) Mr. Huang Ming Yang (Master by-course ...

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. Abstract Carbon materials show their importance in electrochemical energy storage (EES) devices as key components of electrodes, such as active materials, conductive additives and buffering framewo...

Introduction. Film capacitors possess the advantages including the high power-density and high breakdown strength ( $E_b$ ) over the other energy storage devices [1]. With the quick development of modern electrical

system, the requirement of dielectrics with high energy density ( $U_e$ ) and low loss for high electric field energy storage applications is rapidly increasing.

Dielectric ceramic capacitors with high energy storage performance are indispensable components in high-power pulse electronic systems. Herein, a collaborative optimization design is employed to achieve excellent energy storage performance in rare-earth oxides modified  $0.76(0.94\text{Bi } 0.5 \text{ Na } 0.5 \text{ TiO}_3 - 0.06\text{BaTiO}_3) - 0.24\text{Sr } 0.7 \text{ Bi } 0.2 \text{ TiO}_3$  (BNBT ...

With the continuing demand for the minimization of electrochemical energy storage devices, the volumetric performance has become equally important as the gravimetric metrics for rechargeable batteries used in limited spaces. High-capacity anode materials promise to significantly improve the volumetric performance of lithium-ion batteries, but the issues of ...

DOI: 10.1016/J.PNSC.2008.07.014 Corpus ID: 53959368; Progress in electrical energy storage system: A critical review @article{Chen2009ProgressIE, title={Progress in electrical energy storage system: A critical review}, author={Haisheng Chen and Thang Ngoc Cong and Wei Yang and Chunqing Tan and Yongliang Li and Yulong Ding}, journal={Progress ...

Both sustainable development in environment and safety of high-power systems require to develop a novel lead-free dielectric capacitor with high energy density ( $W_{rec}$ ) at low applied electric field this work, a remarkably high  $W_{rec}$  of  $2.9 \text{ J/cm}^3$  accompanying with energy storage efficiency of 56% was achieved in  $\text{Ag } 0.9 \text{ Sr } 0.05 \text{ NbO}_3$  ceramic at a low ...

Weijing Chen. Shaanxi University of Science and Technology. ... Energy & Environmental Materials 3 (2), 160-165, 2020. 103: ... Q Sun, S Hong, WJ Chen, B Pang, ZY Du, WB Yang, Z Sun, ... Journal of Leather Science and Engineering 3, 1-23, 2021. 23: 2021: Unmasking the heterogeneity of carbohydrates in heartwood, sapwood, and bark of Eucalyptus.

The development of energy storage technology is strategically crucial for building China's clean energy system, improving energy structure and promoting low-carbon energy ...

In general, the recoverable energy-storage density  $U_e$  of a dielectric depends on its polarization ( $P$ ) under the applied electric field  $E$ ,  $U_e = \frac{1}{2} P_r P_m E_d$ , where  $P_m$  and  $P_r$  are maximum polarization and remnant polarization, respectively, and the energy-storage efficiency  $\eta$  is calculated by  $U_e / (U_e + U_{loss})$  (fig. S1). To obtain a high  $U_e$  and  $\eta$ , a large ...

Recent advances in energy storage mechanism of aqueous zinc-ion batteries Duo Chen, Mengjie Lu, Dong Cai, Hang Yang, Wei Han ... D. Chen, M. Lu, D. Cai, H. Yang, W. Han, Recent advances in energy ...

Semantic Scholar extracted view of "Energy storage performance and mechanism of the novel copper pyrovanadate  $\text{Cu}_3\text{V}_2\text{O}_7(\text{OH})_2 \cdot 2\text{H}_2\text{O}$  cathode for aqueous zinc ion batteries" by Lin-lin Chen et

al. ... (OH)<sub>2</sub>·2H<sub>2</sub>O cathode for aqueous zinc ion batteries}, author={Lin-lin Chen and Zhan-hong Yang and Wu Jian and Hongzhe Chen and Jinlei Meng}, journal ...

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. Abstract High energy density solid-state lithium batteries require good ionic conductive solid electrolytes (SE) and stable matching with high-voltage electrode materials.

Author notes. Yanchen Liu and Yafen Chen contributed equally to this work. Authors and Affiliations. Shenzhen Key Laboratory of Advanced Materials, Department of Materials Science and Engineering, Harbin Institute of ...

Significantly, high-resolution TEM image (Fig. S1c) shows a great deal of micropores in the carbon walls, which in favor of the energy storage for supercapacitors [26]. The generation of micropores is due to the activation of carbon precursors by potassium/potassium oxide from the decomposition of citrate potassium, which is confirmed by TG ...

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