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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 developments worldwide.

500. Ke Zhou, Yining Li, Shiyao Zhen, Maojie Zhang, Chunyang Zhang, Corsin Battaglia, Haodong Liu, Kuan Wang, Pengfei Yan, Jianjun Liu, Yong Yang; Tailoring the Redox-active Transition Metal Content to Enhance Cycling Stability in Cation-disordered Rock-salt Oxides; Energy Storage Materials, 2021, 43, 275-283. [\\_pdf](#)

select article Corrigendum to "Multifunctional Ni-doped CoSe<sub>2</sub> nanoparticles decorated bilayer carbon structures for polysulfide conversion and dendrite-free lithium toward high-performance Li-S full cell" [Energy Storage Materials Volume 62 (2023) 102925]

Therefore, employing energy storage stations is a promising option to improve the peak shaving capability of the system and promote the consumption of renewable energy in renewable energy power bases (REBs). Currently, battery storage is the most commonly used solution for energy storage. It offers advantages such as high efficiency, flexible ...

Battery electricity storage is a key technology in the world's transition to a sustainable energy system. Battery systems can support a wide range of services needed for the transition, from providing frequency response, reserve capacity, black-start capability and other grid services, to storing power in electric vehicles, upgrading mini-grids and supporting "self-consumption" of ...

High recoverable energy density ( $W_{rec} \sim 2.1 \text{ J/cm}^3$ ) was obtained in  $(0.7 - x)\text{BiFeO}_3 - 0.3\text{BaTiO}_3 - x\text{Bi}(\text{Zn}_{2/3}\text{Nb}_{1/3})\text{O}_3 + 0.1 \text{ wt } \% \text{ Mn}_2\text{O}_3$  (BF-BT-xBZN,  $x = 0.05$ ) lead-free ceramics at  $\sim 200 \text{ kV/cm}$ . Fast discharge speeds ( $\sim 0.5 \text{ us}$ ), low leakage ( $\sim 10^{-7} \text{ A/cm}^2$ ), and small temperature variation in  $W_{rec}$  ( $\sim 25\%$  from 23 to 150  $^\circ\text{C}$ ) confirmed the potential for these ...

Integrative Energy Storage Solutions: MXenes offer a platform for integrated energy storage solutions that extend beyond conventional batteries to catalysis, sensors, and electronics. As researchers focus on MXene-based supercapacitors, hybrid systems, and beyond, there is a remarkable opportunity to create versatile devices with high power and ...

A novel  $\text{Al}_2\text{O}_3 @ \text{Na}_{0.67}\text{Zn}_{0.1}\text{Mn}_{0.9}\text{O}_2$  cathode is designed by combining both lattice modification and surficial stabilization strategies. Specifically, the  $\text{Zn}^{2+}$  substitution completely suppresses phase transformations of  $\text{Na}_{0.67}\text{MnO}_2$  electrode and the uniform  $\text{Al}_2\text{O}_3$  nano-layer protects the electrode from corrosion of acidic species, forms homogeneous and ...

Calcium looping is a potential thermochemical energy storage technology applied in a high-temperature working window. However,  $\text{CaCO}_3/\text{CaO}$  materials are prone to encounter severe sintering, exhibiting poor thermal energy storage/release stability. To improve the thermochemical energy storage stability, different amounts (5, 15, and 30 wt %) of a Zr ...

Coupled and decoupled hierarchical carbon nanomaterials toward high-energy-density quasi-solid-state Na-Ion hybrid energy storage devices. Yiju Li, Yong Yang, Jinhui Zhou, Shuangyan Lin, ... Shaojun Guo. Pages 530-538 View PDF. Article preview.

Among various energy storage devices, supercapacitors have been widely studied owing to their fast charging/discharging, high power density and long cycle life [2, 3]. The energy storage mechanism of supercapacitors can be generally classified into two categories: electric double layer capacitance and pseudocapacitance.

Hongjun Yue, Huixin Chen, Chen Zhao, Zhiming Zheng, Ke Zhou, Qiaobao Zhang, Guiming Zhong, Can-Zhong Lu, Yong Yang, Reversible potassium storage in ultrafine  $\text{CF}_x$ : A superior cathode material for potassium batteries and its mechanism, *Journal of Energy Chemistry* 53 (2021) 347-353? 2.

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. ... Ke Zhou. State Key Laboratory for Physical Chemistry of Solid Surface, Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, 361005 China ...

Among the different designed materials for primary batteries, Lithium/fluorinated carbon ( $\text{Li}/\text{CF}_x$ ) primary battery has the relatively high theoretical energy density (2180.0 Wh/kg,  $x = 1$ ) [3], and has the advantages of low self-discharge rate, long storage life (10 years) [4], stable discharge platform (about 2.0-3.1 V) [5] etc..

Current studies of cathodes for potassium batteries (PBs) mainly focus on the intercalation-type materials. The conversion-type materials that possess much higher theoretical capacities are rarely discussed in previous literatures. In this work, carbon fluoride ( $\text{CF}_x$ ) is reported as a high capacity conversion-type cathode for PBs for the first time.

MITEI's three-year Future of Energy Storage study explored the role that energy storage can play in fighting climate change and in the global adoption of clean energy grids. Replacing fossil fuel-based power generation with power generation from wind and solar resources is a key strategy for decarbonizing electricity. Storage



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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 ...

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