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AgNbO 3-based antiferroelectric materials have attracted extensive attention in energy storage due to their double polarization-electric field hysteresis loops, but they always suffer from low breakdown strength (E b) lms with few defects and small thickness exhibit high breakdown strength, which helps to improve energy storage performance. In the present work, an AgNbO ???


Exploiting dual-functional photoelectrodes to harvest and store solar energy is a challenging but efficient way for achieving renewable energy utilization. Herein, multi-heterostructures consisting of N-doped carbon coated MoS 2 nanosheets supported by tubular TiO 2 with photoelectric conversion and electronic transfer interfaces are designed.

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Furthermore, the desolvation energy of Na + in 0.8-T 3 D 1 is investigated, wihch is crucial to battery kinetics [45], especially at LT due to the increased energy barrier [46]. From the DFT calculation result, Na +-THF possesses the lowest desolvation energy of ???63.29 kJ mol ???1 among the components in this electrolyte (Fig. 3 h).

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Jing Ma; Liuzhu Zhu; With the increasing of uncertainty factors, the adjustable margin of power grid is gradually compressed. The energy storage device is an elastic resource, and it can be

Xiaoqing Zhu is currently a Associate Professor at North China Electric Power University. He was once a Joint Ph.D. student of The University of Tennessee and Oak Ridge National Laboratory. His

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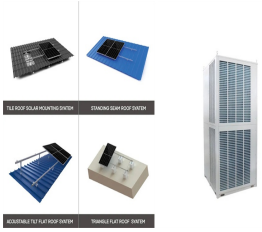

Dielectric capacitors own great potential in next-generation energy storage devices for their fast charge-discharge time, while low energy storage capacity limi Jiaqi Liu, Hansong Wei, Kang Du, Hongmei Jing, Ye Tian, Yongping Pu; Achieving ultrahigh energy storage density in super relaxor BCZT-based lead-free capacitors Zhu, J. Hong, J

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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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


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Our results reveal that regulating the atomic configurational entropy introduces favourable and stable microstructural features, including lattice distorted nano-crystalline grains and a ???


Here, we report a high-entropy stabilized Bi 2 Ti 2 O 7-based dielectric film that exhibits an energy density as high as 182 J cm-3 with an efficiency of 78% at an electric field of 6.35 MV cm-1. ???


The vanadium flow battery (VFB) as one kind of energy storage technique that has enormous impact on the stabilization and smooth output of renewable energy. Key materials like membranes, electrode, and electrolytes will finally determine the performance of VFBs. In this

Perspective, we report on the current understanding of VFBs from materials to stacks, ???

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Among these technologies, thermal energy storage (TES) has a significant role to play in future zero-carbon energy systems due to the following reasons: 1) Zhu Jiang is an associate professor at Southeast University, with more than 8 years of R& D experiences in thermal energy storage (TES) technology. Her research interests include


Rechargeable lithium metal batteries are next generation energy storage devices with high energy density, but face challenges in achieving high energy density, high safety, and long cycle life. Guanzhou Zhu 1, Yuanmin Zhu 2, Cheng-Liang Huang 4, Hung-Chun Tai 4, Xintong Xu 1, Michael Angell 1, Jing-Jong Shyue 8,


Jinhyuk Lee, Daiwei Yu, Zhi Zhu, Xiahui Yao, Chao Wang, Yanhao Dong, Rahul Malik and Ju Li, ACS Applied Energy Materials 3 (2020) 7931???7943. Giant Photonic Response of Mexican-Hat Topological Semiconductors for Mid-infrared to Terahertz Applications, Haowei Xu, Jian Zhou, Hua Wang and Ju Li, Journal of Physical Chemistry Letters 11 (2020


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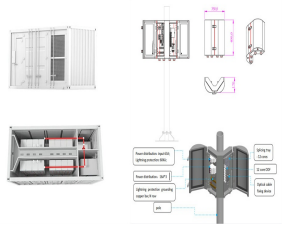

Energy Storage Mater., 2022, 52, 386-394. [13] Shi-Qing Wang#, Xinzhu Wang#, Xiao-Mei Cheng, Jing Ma*, Wei-Yin Sun*, Tailoring Defect-Type and Ligand-Vacancy in Zr(IV) Frameworks for CO2 Photoreduction. Lulu Fu#, Baobao Sun, Cheng Qian, Srikala, Pangannaya, Hong Zhu, Jing Ma, Juli Jiang*, Zhigang Ni*, Ruibing Wang, Xiancai Lu, Leyong Wang

Similar concept was proposed in [99, 100], where banks of varied energy storage elements and battery types were used with a global charge allocation algorithm that controls the power flow between the storage banks. ???

Mingyuan Zhao, Jing Wang*, Ji Zhang, Li-Feng Zhu *, Lei Zhao*, Ultrahigh energy storage performance realized in AgNbO3-based antiferroelectric materials via multiscale engineering, Journal of Advanced Ceramics, 12(6): 1166???1177 (2023).

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