

Translating the materials metrics of graphene into supercapacitor performance is critical but engineering capacitive energy storage is challenging. In article number 2203761, Jinyou Shao and co-workers introduce a bubble-induced method for fabricating graphene microspheres with high ion conductivity and efficient utilization of surface area, ...

As a vital material utilized in energy storage capacitors, dielectric ceramics have widespread applications in high-power pulse devices. However, the development of dielectric ceramics with both high energy density and efficiency at high temperatures poses a significant challenge. In this study, we employ high-entropy strategy and band gap engineering to enhance the energy ...

Jinyou Shao; Massive fabrication of graphene with high density and high ion conductivity has been a long-standing challenge for energy storage communities. Here, inspired by the turbostratic aligning of tea leaves in boiling water, we propose a new design of turbostratic graphene formed following turbulent flow and densified by isotropic ...

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.

Simultaneously achieving high energy density (U_e) and charge-discharge efficiency (η) of dielectric materials at the relatively low operating electric field remains a persistent challenge to their practical applications. Herein, a P(VDF-HFP)-based triple-layer film by introducing the core-shell $\text{Al}_2\text{O}_3@\text{CNT}$ in the middle layer and 0.05 wt.% boron nitride nanosheets (BNNSs) in the ...

DOI: 10.1016/j.jpowsour.2022.231102 Corpus ID: 246569903; High performance solid-state supercapacitors based on highly conductive organogel electrolyte at low temperature @article{Zheng2022HighPS, title={High performance solid-state supercapacitors based on highly conductive organogel electrolyte at low temperature}, author={Qinwen Zheng and Xiangming ...

Advanced Energy Materials is your prime applied energy journal for research providing solutions to today's global energy challenges. Abstract Translating the material merits of graphene to practical supercapacitor devices is critical for promoting capacitive energy storage, but is challenging due to the limited scalability in fa...

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 ...

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Xiangming Li, Qinwen Zheng, Congming Li, Gangqiang Liu, Qingzhen Yang, Yingche Wang, Pengcheng Sun, Hongmiao Tian, Chunhui Wang, Xiaoliang Chen, Jinyou Shao *. Bubble Up Induced Graphene Microspheres for Engineering Capacitive Energy Storage [J]. Advanced Energy Materials. 2023. 2203761. (SCI, IF=29.698) Mingguang Shen, Ben Q. Li *, Qingzhen ...

Fengwan Zhao, Jie Zhang*, Hongmiao Tian, Chengping Lv, Hechuan Ma, Yongyi Li, Xiaoming Chen*, Jinyou Shao, High Energy Storage Performance of Triple-layered Nanocomposites with Aligned Conductive Nanofillers over a Broad Electric Field Range, Energy Storage Materials, 2023, 63,103013. 8. Shuai Li, Hongmiao Tian*, Yu Fan, Chunhui Wang, Xiangming ...

Dielectric energy-storage capacitors, known for their ultrafast discharge time and high-power density, find widespread applications in high-power pulse devices. However, ceramics featuring a tetragonal tungsten bronze structure (TTBs) have received limited attention due to their lower energy-storage capacity compared to perovskite counterparts.

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