

The energy storage performance is influenced by various essential factors, such as the choice of the polymer matrix, the filler type, the filler morphologies, the interfacial engineering, and the ...

Multifunctionality of all-in-one energy storage devices with the properties involving flexibility, interface stability, and wearability are urgently needed for portable electronic ...

Lead-free dielectric ceramics with high energy storage performance (ESP) are strongly desired for pulse power capacitor applications. However, low recoverable energy storage density (W_{rec}) under low electric fields seriously hinders their applications in miniaturized and integrated electronic devices this work, we adopted a synergism strategy to develop (Bi 0.5 ...

Two-dimensional (2D) transition metal oxide composited with graphene has attracted worldwide attention in the energy storage and conversation field. Here, a 2D rGO/NiO heterostructure film on ITO glass was designed and applied to electrochromic energy storage. The 2D heterostructure increases the interlayer spacing of the NiO-based films and the electrochemically active ...

The traditional energy storage devices are always assembled by pressing the components of electrode membranes and electrolyte membranes [20, 21], which make the electrode and electrolyte prone to slip and cause an increase of interface barriers, mainly because there is no direct connection between the electrode and electrolyte bsequently, polyvinyl ...

DOI: 10.1109/ICMA.2018.8484339 Corpus ID: 52926285; Control Strategy of Hybrid Energy Storage System in Ship Electric Propulsion @article{Zhang2018ControlSO, title={Control Strategy of Hybrid Energy Storage System in Ship Electric Propulsion}, author={Jingnan Zhang and Zou Ying}, journal={2018 IEEE International Conference on Mechatronics and Automation (ICMA)}, ...

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Dielectric capacitors have attracted growing attention because of their important applications in advanced high power and/or pulsed power electronic devices. Nevertheless, the synergistic enhancement of recoverable energy storage density ($W_{rec} > 10 \text{ J/cm}^3$) and efficiency ($\eta > 80\%$) is still a great challenge for lead-free dielectric bulk ceramics.

Due to high power density, fast charge/discharge speed, and high reliability, dielectric capacitors are widely

used in pulsed power systems and power electronic systems. However, compared with other energy storage devices such as batteries and supercapacitors, the energy storage density of dielectric capacitors is low, which results in the huge system volume when applied in pulse ...

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Here, we report a facile method based on interfacial cross-linking for preparing all-in-one energy storage devices, where the same polymer substrate is used in both electrode and electrolyte, while the electrolyte as the cross-linking agent to obtain more stable interface between the components of the all-in-one energy storage devices.

Aqueous zinc-based energy storage (ZES) devices are promising candidates for portable and grid-scale applications owing to their intrinsically high safety, low cost, and high theoretical energy density. However, the conventional aqueous electrolytes are not capable of working at low temperature. Here we report a frigostable, cost-effective, safe and eco-friendly hybrid ...

Ying Wang#, Ying Fang#, Luyao Huang, Jiwei Wang, Hua Zhou, Guanyi Wang, Qingliu Wu, Guofeng Wang*, Hongli Zhu* ... Promoting Electrochemical Rates by Concurrent Ionic-Electronic Conductivity Enhancement in High Mass Loading Cathode Electrode. Ying Wang, Aleksandar M., Tongtai Ji, Ercan Cakmak, Xianhui Zhao, Luyao Huang, Brian Sheldon*, Hongli ...

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Filled and unfilled $\text{Sr}_2\text{NaNb}_5\text{O}_{15}$ -based tungsten bronze ceramics based on Gd doping were prepared using a traditional solid-state reaction method. Relaxor behaviors of the two different systems were analyzed, and the corresponding energy storage performance was also characterized. With the support of weakly coupled polar nanoregions and a non-polar matrix, ...

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