Nanoribbon energy storage

Polymer dielectrics operating at >150 °C with exceptional capacitive energy storage are crucial for electric and electronic devices. When exposed to high electric fields and temperatures, efficient heat management is paramount in ...

As a result, this network exhibits high capacitance, excellent rate capability and good charge-discharge stability for energy storage. An asymmetric supercapacitor based on a 3D ...

Rechargeable aqueous zinc-ion batteries are deemed as attractive candidates for energy storage systems owning to their high safety, low cost, etc. However, the hazards ...

Sodium-ion batteries offer a promising solution for large-scale energy storage. However, development of suitable anode materials with long cycle life and high-rate capability is a major challenge. Herein, we report K 2 Ti ...

Carbon encapsulation and optimization of nanoparticle structure are key strategies in the development of battery electrode materials. Herein, we report a simple, one ...

As a typical family of two-dimensional (2D) materials, MXenes present physiochemical properties and potential for use in energy storage applications. However, MXenes suffer some of the ...

One-dimensional (1D) Tetra-Penta-Hepta graphene nanoribbon (TPH-GNR) is an enticing material because of its distinctive structural and electrical characteristics. Using first ...

His main research is in self-assembled nanomaterials, oriented nanostructures, and the application of these materials for large scale energy storage, chemical conversion and ...

Ultrathin single-crystalline vanadium pentoxide nanoribbon constructed 3D networks for superior energy storage + Liujun Cao, ? ab Jixin Zhu, ? c Yanhong Li,d Peng Xiao,d Yunhuai Zhang,a ...

Introduction The natural abundance and widespread availability of sodium (Na) on earth make sodium-ion batteries/ capacitors (SIBs/SICs) attractive as cost-effective alter-natives to their ...

The adsorption energy per hydrogen molecule on NLi 4 -decorated graphene nanoribbon as shown in Fig. 4, Fig. 5, the averaged length of H-H bond, and hydrogen storage ...

Fiber supercapacitors (FSs) based on transition metal oxides (TMOs) have garnered considerable attention as energy storage solutions for wearable electronics owing to ...

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As a typical example, advanced energy storage system, such as metal-air battery, requires bifunctional oxygen cathodes capable of efficient switchability between OER ...

Efficient electromagnetic wave absorbing materials with lightweight and multifunctional integrated applications have broad development application prospects. ...

A single-walled carbon nanotube spring stores three times more mechanical energy than a lithium-ion battery, while offering wide temperature stability and posing no ...

In order to properly exploit both faradic and non-faradic components of energy storage leading to better performance of the device, in this work, it has been aimed to develop reduced graphene ...

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