Jingyi optical energy storage

With the rapid development of Big Data and artificial intelligence, emerging information technology compels dramatically increasing demands on data information storage. At present, conventional magnetization-based information storage methods generally suffer from technique challenges raised by short lifetime and high energy consumption. Optical data storage technology, in ...

a) Line chart of the research trend of FeO x-based materials for supercapacitors, lithium ion battery, sodium ion battery, and other batteries in recent years.b) Bar chart and pie chart of the ratio of FeO x-based materials applied in electrochemical energy storage (others containing lithium-sodium ion battery, alkaline secondary battery, and Fe-air battery).

In view of its unique structural features of high surface area (theoretical specific surface area (SSA) is 2630 m 2 /g), flexibility, high mechanical strength, chemical stability, superior electric and thermal conductivity, graphene has been considered to be an ideal material for energy storage applications [3] sides, the morphological advantages of its nanosheet ...

The ever-growing energy demand of modern society calls for the development of high-loading and high-energy-density batteries, and substantial research efforts are required to optimize electrode microstructures for improved energy storage. Low-tortuosity architecture proves effective in promoting charge transport kinetics in thick electrodes; however, ...

Micro-supercapacitors with high power density and stability promise emerging energy storage devices. However, their relatively low energy density and poor mechanical stability largely restricts their application. Here, we report an all-in-one planar micro-supercapacitor (MSC) using ZnO nanosheets anchored on the porous and 3D laser-induced porous graphene foams ...

Lithium ion batteries (LIBs) have swept the whole energy storage field. However, the current mainstream lithium batteries are difficult to operate stably at high temperature (>60°C) due to the decomposition of electrolyte and solid electrolyte interphase (SEI), the cathode metal elements dissolution behavior, and potential thermal runaway.

Silver nanocubes with edge lengths controllable in the range of 30-200 nm were synthesized using an approach based on seeded growth using single-crystal Ag seeds to direct the growth and the use of AgNO(3) as a precursor to elemental Ag to demonstrate surface plasmon resonance and surface-enhanced Raman scattering properties. Silver nanocubes ...

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