

Welcome to our "Coordination Chemistry and Functional Nanoporous Materials" laboratory led by Prof. Hai-Long Jiang. The main research activities of our lab include: 1) stable metal-organic frameworks (MOFs): design, synthesis and modification; 2) MOF-based materials: fabrication and catalysis; 3) MOFs for CO₂ capture and conversion.

Sodium Storage. In article number 2309701, Xifei Li, Mingjun Wang, and co-workers report that the electron spin state of Na₄Fe₃(PO₄)₂P₂O₇ cathode can be optimized from low-spin to medium-spin via Mn/F dual-doping, thus decreasing the band gap and increasing the electronic conductivity of the material, which thereby results in superior sodium ...

Ever-increasing global energy consumption has driven the development of renewable energy technologies to reduce greenhouse gas emissions and air pollution. Battery energy storage systems (BESS) with high electrochemical performance are critical for enabling renewable yet intermittent sources of energy such as solar and wind. In recent years, ...

In recent years, many scholars have carried out extensive research on user side energy storage configuration and operation strategy. In [6] and [7], the value of energy storage system is analyzed in three aspects: low storage and high generation arbitrage, reducing transmission congestion and delaying power grid capacity expansion [8], the economic ...

Barium titanate (BaTiO₃) and Bismuth ferrite (BiFeO₃) have been investigated for many years. Both of them have good electrical properties in the application of industries such as flexible displays, actuators, transducers, flexible memory, multilayer ceramic capacitors, etc. Moreover, BiFeO₃ is a room temperature multiferroic material that adds a halo to it. Although ...

In addition, we also have explored the energy-storage mechanism of Zn²⁺ ions in this VSe₂ ... Rui Jiang, Wenhai Xiao, Xiaoyan Shi, Junling Xu, Jianchao Sun, Lianyi Shao, Zhipeng Sun. One-step Solid-State Synthesis of V_{1.13}Se₂/V₂O₃ Heterostructure as a High Pseudocapacitance Anode for Fast-Charging Sodium-Ion Batteries.

Researchers have studied the integration of renewable energy with ESSs [10], wind-solar hybrid power generation systems, wind-storage access power systems [11], and optical storage distribution networks [10]. The emergence of new technologies has brought greater challenges to the consumption of renewable energy and the frequency and peak regulation of ...

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