

High-performance dielectric capacitors featuring large recoverable energy storage density (W_{rec}) and high discharge efficiency (?) are beneficial to realize the device ...

Comprehensive reference work for researchers and engineers working with advanced and emerging nanostructured battery and supercapacitor materials Lithium-ion ...

Energy Storage and Conversion In the field of energy storage and conversion, nanoceramics are making significant strides. They are key components in the development of lithium-ion batteries ...

The highly dynamic heterogeneous nano-microregion, with different orientations and greatly reduced grain size to submicron level, can reduce energy loss, improve breakdown ...

Ceramic capacitors with ultrahigh power density are crucial in modern electrical applications, especially under high-temperature conditions. However, the relatively low energy ...

Herein, it is worth noting that SiO_2 , TiO_2 , AlN , and BN remain favorable reinforcement materials for improving thermal stability, breakdown strength, and energy density of PI-matrix for high ...

Figures (5) Abstract and Figures High-performance dielectric capacitors for energy storage play a pivotal role in advancing pulsed power technology across ...

This Special Issue of Nanomaterials showcase state-of-the-art contributions in a broad range of subjects related to the preparation approaches and characterization techniques ...

This includes exploring the energy storage mechanisms of ceramic dielectrics, examining the typical energy storage systems of lead-free ceramics in recent years, and ...

This work reports a multilayer ceramic capacitor with exceptional energy storage performance. Nano-micro engineering based on a high-entropy approach enables the ...

This review introduces the research status and development challenges of multilayer ceramic capacitor energy storage. First, it reviews the structure and energy storage ...

Abstract Advanced ceramic materials with tailored properties are at the core of established and emerging energy technologies. Applications encompass high- temperature power generation, ...

With the rapid advancement of science and technology, and more attention on environmental protection,

energy storage has become a hot research field. Scientists and ...

This manuscript explores the diverse and evolving landscape of advanced ceramics in energy storage applications. With a focus on addressing the pressing demands of ...

The linear dielectric CaTiO_3 is utilized to enhance the energy storage efficiency of the system. At the same time, a small amount of sintering aid is added to optimize the ...

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