

Can nanomaterials be used for energy storage devices?

In this Special Issue of Nanomaterials, we present recent advancements in nanomaterials and nanotechnology for energy storage devices, including, but not limited to, batteries, Li-ion batteries, Li-S batteries, electric double-layer capacitors, hybrid capacitors and fuel cells.

What is a nano- and micro-structured material collection?

This Collection showcases original research focusing on the design and synthesis of nano- and micro-structured materials for energy and environmental applications. Assembling original research Articles on the design and synthesis of nano- and micro-structured materials for energy and environmental applications.

What role does nanotechnology play in energy storage?

Nanomaterials and nanotechnology have played central roles in the realization of high-efficiency and next-generation energy storage devices.

Why are transition metal dichalcogenide nanomaterials important?

Thus, transition metal dichalcogenide nanomaterials have shown important research progress in the field of energy conversion and storage.

Are natural fiber reinforced polymer nanocomposites sustainable?

The review paper, "Recent Development of Natural Fiber Reinforced Polymer Nanocomposites", led by Mahmood Anwar, discusses the increasing use of natural fibers as a sustainable alternative for synthetic fibers in polymer matrix composites for various applications.

What are the different types of nanostructured materials?

In recent years, the development of different organic and inorganic nanostructured materials such as nanocarbons, metal oxides (WO_3 and Co_3O_4), metal sulphides (MoS_2 and WS_2), graphene nanosheets, and conducting polymers has enabled the fabrication of high-performance devices.

The demand for hybrid materials containing components of different nature and properties in energy-related application areas is constantly increasing. 166 Zero-dimensional ...

In this regard, among the list of energy storage devices, electrochemical capacitors (ECs) have drawn much attention because of their intrinsic features like higher specific power density ...

The main energy harvesting applications such as piezoelectric generators, solar cells and hydrogen evolution reactions are analyzed, while special focus is also given to the related energy storage technologies such as ...

For energy-related applications such as solar cells, catalysts, thermo-electrics, lithium-ion batteries, graphene-based materials, supercapacitors, and hydrogen storage systems, nanostructured materials ...

1. Introduction One key challenge of the present time is the increasing demand of energy storage devices to store renewable energies. 1-6 Among such storage systems, supercapacitors ...

His work in energy storage nanomaterials merges chemistry and engineering, inspiring him to create more energy-efficient products that will bring a paradigm shift in the way we perceive ...

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Environmental concerns, Energy crisis, Electrical energy storage, Heteroatom doped carbon nanomaterials, Electrochemical energy storage systems 1.0 Introduction Energy landscape is ...

Reviews the rapidly expanding field of 2D nanomaterials; ... while special focus is also given to the related energy storage technologies such as rechargeable batteries, supercapacitors and wearable energy storage ...

Functional nanomaterials have pushed the rapid development in energy storage and energy harvesting systems, which attracts more and more innovative and novel research. Therefore, this collection focuses on the fundamentals, ...

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