Titanium nitride energy storage material

To meet the rapidly growing demands for energy autonomous operation and miniaturization of electronic devices, it is desirable to develop high-performance ultracompact ...

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Although all of these metal nitrides possess unique behavior for energy storage, Titanium nitride has been a pressing topic of research for SC electrodes [36,37].

The creation of innovative materials that enhance energy storage efficiency is crucial for sustainable societal development and meeting the world"s gr...

Titanium nitride (TiN) is a transition metal nitride material with remarkable properties including high electrical conductivity, high hardness and excellent thermal stability ...

The selection of phase change materials (PCMs) as energy storage media is an effective way to achieve practical utilization to solve the uncontinuity and unstability of solar ...

Lithium-sulfur (Li-S) cells have received particular attention as a "post lithium ion" energy storage system. However, low sulfur utilization and poor redox kinetics are still key challenges to ...

MXenes are rising in the two-dimensional materials family with excellent performances in many applications, particularly in electrochemical energy storage. Here, we summarize the most up ...

Recently, titanium nitrides have attracted extensive interests as an active material for electrodes in fuel cell because of their excellent physical properties (such as high melting ...

Lithium-sulfur (Li-S) batteries have been regarded as promising energy-storage systems, due to their high theoretical capacity and energy density. However, the ...

Electrode material design is a subject of intense research in the area of energy development and advancement, due to its essential role in the electrochemical ...

The electrochemical properties of metal nitride electrodes for supercapacitors depend upon the selected group of parent metals. In the conclusion of this review, we ...

After 30 min of operation, the LED maintained a constant level of brightness, indicating C@TiN-S have

potential applications in delivering continuous, long-term, usage in ...

Two-dimensional (2D) transition metal nitride MXenes have been explored as promising alternatives to the widely used titanium carbide MXene for electronic and energy ...

This work describes titanium nitride@nitrogen-doped carbon nanocage (TiN@NCNC) composite cathodes for AZHSCs to achieve a greatly improved energy density, ...

Micro-supercapacitors (MSCs) are promising miniaturized and compact electrochemical energy storage devices for autonomous smart microelectronics. Unfortunately, ...

High energy storage density titanium nitride-pentaerythritol solid-solid composite phase change materials for light-thermal-electric conversion Rongrong Luo a, Liuwei Wang a, ...

The anode material in these above batteries is the key factor to enhance the energy storage property, energy/power density and cycle performance. Up to date, tremendous ...

Lithium-sulfur (Li-S) cells have received particular attention as a "post lithium ion" energy storage system. However, low sulfur utilization and poor redox kinetics are still key ...

Nitride MXene materials have shown potential application prospects in electronic devices, energy storage technology, catalysis, sensor technology and other fields.

Supercapacitors as a new type of energy storage devices bridging the gap between conventional capacitors and batteries have aroused widespread concern. Herein, ...

In this work, we synthesized different nanostructured and crystalline-structured MnO2 modified TiN nanotube arrays electrode materials by hydrothermal method and ...

This article explores why Titanium Nitride (TiN) electrodes are star materials in biomedical and energy storage fields. We uncover key features like high surface area and low ...

Also, their applications in adsorption, removal and separation mechanisms were reviewed. Further, advances of metal nitride nanostructures in energy storage applications are ...

Abstract Titanium nitride (TiN), a prominent transition metal nitride (TMN), has garnered significant attention due to its exceptional characteristics and ...

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