Heterojunction Titanium Battery

How can a defective TiO 2 heterojunction anode improve lithium-ion storage performance?
The defective TiO 2 @Co@NC heterojunction anode using self-assembled nanotubes as a scaffoldexhibits enhanced lithium-ion storage performances. Besides,Ni et al. 15a prepared ordered S-Fe 2 O 3 nanotubes by combining electrochemical anodization of Fe foil and subsequent sulfurization process.

What is N-TiO 2 / Ti 3 C 2 T X heterojunction?
A surface-functionalized nitrogen-doped two-dimensionalTiO 2 /Ti 3 C 2 T x heterojunction (N-TiO 2 /Ti 3 C 2 T x) was fabricated theoretically,with high conductivity and optimized electrocatalytic active sites.

What is a defective TiO 2 heterojunction anode?
Zhang et al. 16 designed a defective-TiO 2 -supported Co-nanodots-anchored N-doped carbon-coated(defective TiO 2 @Co@NC) heterojunction anode with dual-Schottky structure by combining electrochemical anodizing and liquid phase deposition.

How does N-TiO 2 / Ti 3 C 2 T X heterojunction affect adsorption?
More importantly,the precise regulation of active sites in the N-TiO 2 /Ti 3 C 2 T x heterojunction optimized the adsorptionfor LiO 2 and Li 2 O 2,facilitating the sluggish kinetics with a lowest theoretical overpotential in both the oxygen reduction reaction (ORR) and oxygen evolution reaction (OER).

Are metal compound-based heterojunctions a candidate anode for lithium/sodium-ion batteries?
In recent years, metal compound-based heterojunctions have received increasing attention from researchers as a candidate anode for lithium/sodium-ion batteries, because heterojunction anodes possess unique interfaces, robust architectures, and synergistic effects, thus promoting Li/Na ions storage and accelerating ions/electrons transport.

Does Bi/Bi 2 O 3 / TiO 2 heterostructure have a photocarrier?
The excellent photoelectric activity of Bi/Bi 2 O 3 /TiO 2 heterostructure leads to abundant and persistent photocarriersat the interface under visible light,as evidenced by reduced contact impedance and charge-transfer impedance compared to Bi 2 O 3 and TiO 2 (Fig. S11).

A surface-functionalized nitrogen-doped two-dimensional TiO 2 /Ti 3 C 2 T x heterojunction (N-TiO 2 /Ti 3 C 2 T x) was fabricated theoretically, with high conductivity and optimized electrocatalytic active sites.

Highly ordered self-assembled TiO 2 nanotube arrays grow on titanium foils through electrochemical anodic oxidation processes. The defective TiO 2 @Co@NC ...

With increasingly serious environmental pollution problems, the development of efficient photocatalytic materials has become a hotspot in current research. This study focused ...

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In this paper, the Ti 3 C 2 T x /GO heterojunction composites were prepared by high-speed ball milling in vacuum. Graphene oxide acted as a spacer between Ti 3 C 2 T x nano-layers in order to enlarge the space ...

Herein, rutile/anatase titanium dioxide heterojunction supported platinum nanoparticles (Pt-NPs) design with interfacial effect was developed as efficient HER catalyst ...

In this work, a facile and low-cost method is introduced to boost performance of TiO2-based UV photodetector (PD). The method involves addition of a solution-processed ...

We present a new beta voltaic cell based on reduced Graphene Oxide ...

Heterogeneous Interface Design with Oxygen Vacancy-Rich Assistance High-Capacity Titanium-Based Oxide Anode Materials for Sodium-Ion Batteries

The efficient light-to-electrical energy conversion process in the Bi/Bi 2 O 3 ...

Titanium dioxide of bronze phase (TiO 2 (B)) has attracted considerable attention as a promising alternative lithium/sodium-ion battery anode due to its excellent ...

Reasonable heterojunction design plays an important role in promoting photocatalysis. The ternary heterojunction 3J-2DT (Butburee et al. 2019), which was used to ...

Herein, this review presents the recent research progress of heterojunction-type anode materials, focusing on the application of various types of heterojunctions in ...

Here, inspired by the trees-strengthening approach, a unique titanium dioxide (TiO 2) nanorod ...

The advantages of this method are fast reaction speed, low reaction temperature and uniform doping between species. The TiO 2 /NiO heterojunction was ...

The efficient light-to-electrical energy conversion process in the Bi/Bi 2 O 3 /TiO 2 VPLSBs, driven by the photovoltaic effect, enables the direct incorporation of additional ...

Here, inspired by the trees-strengthening approach, a unique titanium dioxide (TiO 2) nanorod arrays strengthened WO 3 nano-trees (TWNTs) heterojunction was rationally designed and ...

A lithium-oxygen battery based on the formation of lithium oxide (Li2O) can theoretically achieve a high energy density through a four-electron reaction. This is more challenging to accomplish than the one- and two ...

Heterojunction Titanium Battery

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PEO coupling with NiO/C 3 N 4 heterojunction facilitates lithium salts dissociation and polysulfides conversion for ... incorporated titanium dioxide nanoparticles into ...

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