Non-doped heterojunction battery

Does heterojunction structure affect the performance of solar flow batteries?
Then,the impact of the heterojunction structure on the performance of solar flow batteries was investigate in this study. The experimental findings reveal that the formation of the heterojunction structure effectively mitigates the recombination rate of photogenerated carriers within the photoelectrode.

Are bifunctional non-noble metal electrocatalysts suitable for rechargeable metal-air batteries?
The high activity and reliability of bifunctional oxygen catalysts are imperative for rechargeable metal-air batteries. However,the preparation of bifunctional non-noble metal electrocatalysts with multiple active sites remains a great challenge.

Which three-phase heterojunction electrode has the best catalytic performance?
Among all the tested samples,the three-phase heterojunction Cu/Cu 2 O-Sb 2 O 3 -15 electrodeexhibited the best catalytic performance in terms of the Faraday efficiency of CO (FE CO) (Figure S11,Supporting Information) and CO partial current density (jCO) (Figure S12,Supporting Information).

Is the electronic structure of n-doped porous c@coo/MOC synergistically regulated?
Similarly,the Mo 2+,Mo 4+,and Mo 6+peaks in N-doped porous C@CoO/MoC are positively shifted by 0.4,0.3,and 2.2 eV with respect to MOF-derived MoC (Figure 2 c). These results suggest that the electronic structure of the N-doped porous C@CoO/MoC heterojunction is synergistically regulated.

What is the power density of a Zn-air battery?
The NCCM-600-based Zn-air battery displays a high peak power density of 133.36 mW cm -2and a prolonged cycling life of more than 650 h. This work provides avenues for the development of functional materials with enhanced properties in a variety of practical energy applications. 1. Introduction

Which semiconductor is suitable for a p-n heterojunction with Fe 2 O 3?
In particular,the p-type Cu-based semiconductor,with its excellent band structure matching,high hole mobility,and good photo absorption capability,is one of the most suitable semiconductors used to form a p-n heterojunction with Fe 2 O 3. However,Cu 2 O suffers from photo corrosion,resulting in poor stability.

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 ...

VO 2 (B) is considered as a promising anode material for the next-generation sodium-ion batteries (SIBs) due to its accessible raw materials and considerable theoretical capacity. However, the VO 2 (B) electrode has inherent defects such as low conductivity and serious volume expansion, which hinder their practical

application.

The present invention discloses a method of fabricating a heterojunction battery, comprising the steps of: depositing a first amorphous silicon intrinsic layer on the front of an n-type silicon wafer, wherein the n-type silicon wafer may be a monocrystal or polycrystal silicon wafer; depositing an amorphous silicon p layer on the first amorphous silicon intrinsic layer; ...

Within non-aqueous electrolyte systems, the discharge current densities of redox flow batteries and SRFBs typically range around 3-4 mA?cm -2. When employing TiO 2 heterojunction photoelectrodes, the disparity between the charging current density and the desired discharge current density lies at approximately an order of magnitude ...

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2 ???· Non-metal doped C 2 N can be generated by wet doping or dry doping methods, just like BPS@C 2 N, graphene or other two-dimensional materials doping atoms [37], [38], [39]. ...

Designing a heterojunction photocatalyst to improve the separation efficiency of photogenerated electrons and holes is of great significance to improve the hydrogen production efficiency. In this work, we report a rational design to grow ZnIn2S4 on Mo-MOF-derived N-doped C-coated MoO2 (MOZIS), and it has excellent photocatalytic hydrogen production with ...

Herein, we report a novel Ni-CoSe 2 heterostructure coated with nitrogen-doped carbon. Compared to homogeneous cobalt diselenide, it exhibits much stronger adsorption and catalytic conversion abilities towards ...

The battery with larger forbidden band width is used as a battery and the non-doped crystal silicon heterojunction battery forms a laminated structure, so that the open-circuit voltage, the spectral response and the theoretical conversion efficiency limit of the battery can be improved. In recent years, the perovskite battery is rapidly ...

2 ???· Non-metal doped C 2 N can be generated by wet doping or dry doping methods, just like BPS@C 2 N, graphene or other two-dimensional materials doping atoms [37], [38], [39]. The heterojunction of Ti 3 C 2 T 2 with hybridized C 2 N remains unexplored, and the exceptional catalytic properties of both doped C 2 N and Ti 3 C 2 T 2 in EAOPs have prompted our interest.

Heterostructure MnO/MnSe nanoparticles, encapsulated in a nitrogen-doped carbon shell, were synthesized using a hydrothermal approach followed situ calcination and selenization process. The MnO/MnSe@NC electrode possesses a significantly enhanced electrical conductivity.

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This work proposes an advanced cathodic electrocatalyst of three-phase heterojunction Cu-based catalyst (Cu/Cu2O-Sb2O3-15) for rechargeable Zn-CO2 batteries ...

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In-sensor computing architectures can provide energy-efficient multifunctional capabilities, but their application to the mid-infrared range is challenging. Here, the authors report the ...

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