

Nickel phosphide solar container





Overview

In this study, electroless nickel-phosphorus (Ni-P) coatings and their carbon black (CB) nanoparticle composites were successfully deposited and evaluated as selective solar absorbers. Harnessing solar energy is crucial for applications such as water desalination through solar collectors, where efficient conversion of solar radiation into thermal energy is required. The thermal field effect effectively boosts water splitting electrocatalysis by lowering activation energy barriers and accelerating sluggish kinetics. Organic-inorganic halide perovskites have shown great potential for the conversion of solar energy to hydrogen fuel via photocatalytic reaction due to their excellent optoelectronic properties.



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Electroless Nickel Phosphorus Coatings for Enhanced ...

In this study, electroless nickel-phosphorus (Ni-P) coatings and their carbon black (CB) nanoparticle composites were successfully deposited and evaluated as selective solar absorbers.

High-performance light-driven heterogeneous CO

There exists an urgent need to develop new materials to convert CO₂ to useful products. Here, authors demonstrate metal phosphide nanoparticles to enable light-driven CO₂ hydrogenation ...



Transition metal phosphides as cardinal electrocatalytic materials for

Alkaline water electrolysis is a key technology for green hydrogen production in an attempt to decarbonize our energy landscape. Bimetallic TMPs, as reviewed here by Aziz et al., are ...

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Data Sheet.



Bifunctional and Self-Supported NiFeP-Layer-Coated NiP Rods for

Designing efficient and robust nonprecious metal-based electrocatalysts for overall water electrolysis, which is mainly limited by the oxygen evolution reaction (OER), for hydrogen production ...

Monodispersed nickel phosphide nanocrystals in situ grown on ...

Abstract By using cheap, stable, relative low-toxic precursors (the key of the design), a nanocomposite anode material composed of monodispersed nickel phosphide (Ni₂P) nanocrystals ...



Nickel Phosphide Photothermal Catalyst Development for CO₂ ...

Converting CO₂ to CO via the photocatalyzed reverse water gas shift (RWGS) reaction satisfies a critical step in the production of C₁ solar fuels (e.g., CH₄, CH₃OH) and longer hydrocarbons via the ...





14.8% Quantum Efficient Gallium Phosphide Photocatalyst for ...

Gallium phosphide is an established photoelectrode material for H₂ or O₂ evolution from water, but particle-based GaP photocatalysts for H₂ evolution are very rare. To understand the ...

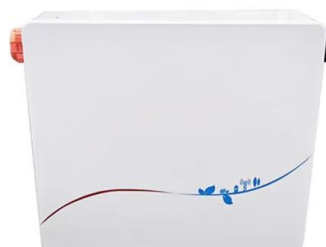


Photothermally boosted water splitting electrocatalysis ...

Based on these concepts, we herein report a robust photothermal-electrocatalytic water splitting system based on broadband solar harvesting nickel phosphide ...

Nickel phosphide nanoarrays decorated on amorphous NiPO

Nickel phosphide nanoarrays decorated on amorphous NiPO_x/Fe(OH)₃: A stable core-shell electrocatalyst for efficient oxygen evolution at large current density Xinding Lv a, Yan Li ...



Monodispersed Nickel Phosphide Nanocrystals In Situ Grown on ...

Request PDF , Monodispersed Nickel Phosphide Nanocrystals In Situ Grown on Reduced Graphene Oxide with Controllable Size and Composition as Counter Electrode for Dye ...



High-performance light-driven heterogeneous CO

Selected as an archetype, Ni₁₂P₅ affords a structure based upon highly dispersed nickel nanoclusters integrated into a phosphorus lattice that harvest light intensely across the entire ...



Synthesis of ternary nickel cobalt phosphide nanowires through

Nickel cobalt phosphide nanowires are fabricated on titanium foil through phosphating reaction from their nickel and cobalt hydroxide precursors, which are employed as the counter ...

Photoreforming of Nonrecyclable Plastic Waste over a ...

We propose cyanamide-functionalized carbon nitride (CN_x) coupled with a nickel phosphide (Ni₂P) H₂ evolution cocatalyst as a noble-metal- and Cd-free ...



Nanostructured nickel phosphide as an efficient photocatalyst: Effect

Nickel phosphide is one of the most significant transition metal phosphide compounds which is used in photoelectrochemical solar cells [7], [8], [9], supercapacitors [10], [11], photocatalytic ...



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