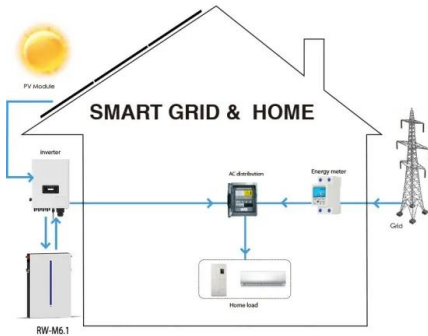


European Solar Energy Storage

Photo-activated hydrogen storage



Photo-activated hydrogen storage



Light-Enabled Reversible Hydrogen Storage of Borohydrides Activated ...

Here we introduce a novel light-induced destabilization mechanism for hydrogen storage reaction of borohydrides under ambient conditions via photogenerated vacancies in LiH.

Application: Photo-Hydrogen -- Redeem Solar Technologies

Our Redeem Photo Reactor can produce green hydrogen from different feed sources, including fresh, contaminated, and salt water, ammonia, or liquid organic hydrogen carriers (LOHCs), making it the most versatile solution on the market.



A scalable solar-driven photocatalytic system for separated H

Here, the authors report a design for a photocatalytic water-splitting system that efficiently produces hydrogen and oxygen in separate cells.

A Roadmap of Sustainable Hydrogen Production and Storage: ...

The present review offers a strategic roadmap for overcoming conventional photocatalyst limitations and emphasizes recent advancements in hybrid photocatalysts, thereby addressing electrode and topology-associated challenges for sustainable hydrogen (H₂) production and storage.



2MW / 5MWh
Customizable

Photothermal-assisted solar hydrogen production: A review

This paper provides a comprehensive review of the latest advancements in photothermal-assisted solar hydrogen production systems, with a focus on the application of photothermal effects in diverse solar hydrogen production systems.

Photothermally-activated suspended aerogel triggers a biphasic

Our approach introduces a fresh perspective for the dehydrogenation of liquid hydrogen carriers, encompassing formic acid, hydrazine hydrate, and so on, and concurrently guarantees exceptional hydrogen release capabilities and excellent hydrogen storage density.



[???-????& ???JACS:????????????](#)

...

Xiaoyue Zhang, Chaoqun Li, Jikai Ye, Xuechun Hu, Wei Chen, Fang Fang, Dalin Sun, Yongfeng Liu*, Xuebin Yu*, and Guanglin Xia*, Light-Enabled Reversible Hydrogen Storage of Borohydrides Activated by Photogenerated

Vacancies, J. Am. Chem. Soc. 2025



Solar-driven (photo)electrochemical devices for green hydrogen

This section provides a detailed overview of three various configurations of PEC-MH setups that combine solar hydrogen production and storage with its subsequent hydrogen release via hydrogen-to-electricity conversion (type B), and thereby can operate as solar-driven rechargeable batteries.



Applications



Solar thermal-activated photocatalysis for hydrogen production ...

The photocatalytic process plays a vital role in the direct conversion and storage of renewable solar energy into green hydrogen (H₂) fuel, a long-term and sustainable technology pathway with the potential for limiting the growth of global carbon emissions.

Photo-Induced Hydrogen Production from Formic Acid Using a

This work presents the photo-induced liberation of H₂ from formic acid (FA) as a liquid H₂ carrier,

using visible light and well-established 5 wt% palladium nanoparticles supported over carbon (Pd/C).



Light-Enabled Reversible Hydrogen Storage of ...

Here we introduce a novel light-induced destabilization mechanism for hydrogen storage reaction of borohydrides under ambient conditions via photogenerated vacancies in LiH.

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