

Hydrogen is emerging as a promising energy carrier in the global quest for sustainable and clean energy sources. This chapter provides a comprehensive overview of ...

Abstract High entropy alloys (HEAs) have attracted substantial attention in diverse fields, including hydrogen storage, owing to their unique structural and functional ...

This paper aims to present an overview of the current state of hydrogen storage methods, and materials, assess the potential benefits and challenges of various storage ...

This article reviews recent innovative materials revolutionising hydrogen storage, focusing more on their potential to improve safety and efficiency. The article concisely ...

Hydrogen storage technologies are pivotal in harnessing hydrogen as a clean energy carrier. Currently, high-pressure gas storage and cryogenic liquid storage dominate the ...

Energy Storage Materials is an international multidisciplinary journal for communicating scientific and technological advances in the field of materials and their devices for advanced energy ...

The demand for clean and sustainable energy solutions is escalating as the global population grows and economies develop. Fossil fuels, which currently dominate the ...

These materials offer the prospect of cost-efficient, leak-free hydrogen storage and generation even under atmospheric pressure. The article explores recent advancements in ...

The advancement of hydrogen production technologies and the realization of hydrogen's potential as a clean and sustainable energy source hinge on the development of efficient and ...

It is part of the online platform SpringerMaterials which is the world's largest resource for physical and chemical data in the material science. Storing hydrogen in solids is widely thought to be ...

The research aims to assess and progress hydrogen storage systems from 2010 to 2020 with an emphasis on obtaining high efficiency, safety, and capacity. To strengthen ...

Hydrogen has the potential to be a viable, clean, alternative energy source to nonrenewable fossil fuels. However, hydrogen's use as an alternative fuel has been hindered ...

# Hydrogen energy materials and energy storage materials

The global transition to sustainable energy systems is accelerating, driven by the urgent need to mitigate climate change and achieve long-term energy security. Central to this effort is the ...

As global energy shifts toward sustainable solutions, switching to sustainable energy, particularly those involving energy storage from hydrogen, relies on effective storage ...

This collection aims to cover cutting-edge materials used for hydrogen production, including traditional and innovative materials. It also focuses on the synthesis of ...

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