

Biogas solar container and hydrogen production

Harnessing biogas might serve as a captivating alternative for generating electricity. The study presents a proposal for a hybrid power system that combines PV solar panels and biogas. ...

The coupling of renewable energy systems has proven to be advantageous in achieving sustainable and reliable energy generation. In this study, the techno-economic and environmental ...

Biogas is an important renewable biomass energy source. Currently, China's biogas production is one of the highest globally, with 12.366 G m³ of gas being produced, which can improve ...

Therefore, integrating electricity-derived hydrogen into biomass-based production concepts appears promising, maximizing carbon utilization while minimizing biomass requirement. ...

This work presents several innovative concepts in which the biogas reforming process is integrated with pre- and post-combustion CO₂ capture using membranes for green hydrogen ...

Abstract This review explores the advancements in solar technologies, encompassing production methods, storage systems, and their integration with renewable energy solutions. It ...

Our objective is to develop an integrated solution in the field of local renewable and sustainable energy production, storage and use, where solar energy collected by PV/T collector, hydrogen and oxygen ...

Solar hydrogen production has attracted widespread attention due to its cleanliness, safety, and potential climate mitigation effects. This is the first paper that reviews various solar ...

The results showed that hydrogen production systems coupled with biogas generators and PV solar panels can be utilized as an alternative solution to provide and make electricity ...

Further, taking the example of Baden-Wuerttemberg in Germany, the ecologic potentials concerning hydrogen (H₂) production and greenhouse gas (GHG) reduction are estimated. The ...

The growing global demand for clean and sustainable energy sources has sparked interest in hybrid energy systems that combine multiple renewable energy technologies. This review ...

Biogas is obtained from the breakdown of biomass by microorganisms and bacteria in the absence of oxygen. Biogas is considered a renewable source of energy, similar to solar energy ...

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Compared to existing designs, the proposed hybrid SPT-biogas GTC configuration demonstrates enhanced efficiency and cost-effectiveness, confirming its potential for integrated ...

H₂ rich biogas has received significant attention as an alternative for a sustainable energy future [20]. Therefore, biomass is exclusively important and considered as a promising ...

A novel cascade system of Kalina and Organic Rankine cycle for cooling and green hydrogen production was proposed. The cascade system is designed to utilize the heat effectively ...

Traditional green hydrogen production system based on biogas reforming dependent on high temperature condition during the reforming process; besides, biogas is always identified as a ...

In this study, a green methanol production system based on renewable solar energy and biomass is proposed, which includes a solar photovoltaic system, biomass anaerobic digestion ...



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