Environmentally friendly power storage and power generation

As a carbon-free fuel, ammonia is an attractive alternative to fossil fuels. The purpose of this paper is to propose an integrated system to produce green ammonia using geothermal energy. ...

Ongoing research is seeking to optimize their performance, enhance scalability, and expand their applications. In essence, the exploration of nature-inspired materials as electrodes for ...

Our anxiety about our environment, limited natural sources, energy storage problems, environmental risks, natural calamities lead to increasing responsiveness towards the status of ...

Here, we explore the paradigm shift towards eco-friendly, sustainable, and safe batteries, inspired by nature, to meet the rising demand for clean energy solutions. Current energy ...

This generator is designed to operate as a power generation and storage system, as it utilises a self-adjusting system that redirects water used to turn the turbine to a storage tank, enabling energy ...

On the other hand, the power-to-gas approach stands out as the most environmentally conscious method, focusing on water electrolysis using renewable energy sources such as ...

Abstract This research focuses on technological progress in energy storage for changing impacts concerning sustainable energy policies and electricity generation within the G-10 ...

Therefore, this study presents the energy scheduling of environmentally friendly energy hubs including renewable wind, solar, and bio-waste resources, and thermal and hydrogen ...

By examining the state of the art in HPTSU, this review will offer valuable insights into the potential of hydrogen as a key enabler of a more sustainable, eco-friendly energy landscape, and ...

The sorption-enhanced gasification systems, which integrate the gasification process with an in-situ CO2 capture system, have emerged as environmentally friendly solutions. This study ...

In conclusion, the review underscores the potential of graphene-based metal oxide composites as promising materials for next-generation energy storage devices to meet the ever ...

The purpose of this study is to present an overview of energy storage methods, uses, and recent developments. The emphasis is on power industry-relevant, environmentally friendly ...

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Pumped hydro storage (PHS) is a form of energy storage that uses potential energy, in this case, water. It is a very old system; however, it is still widely used nowadays, because it presents ...

This research area covers a wide range of technologies but is primarily focused on the power generation sector, energy storage and utilization, efficiency improvements, sustainable ...

The primary objective of the study is to design an efficient hybrid energy system on the islands of Lake Ziway, utilizing locally available and environmentally friendly energy sources, ...

This research presents a novel smart energy system that hybridizes solid oxide fuel cells (SOFC) with compressed air energy storage (CAES) to significantly improve power generation ...

Advanced eco-friendly power and cooling cogeneration-thermal energy storage utilizing phase change materials and chemisorption in renewable-based configurations Obaid Alshammari a, ...

Over the past few decades, there has been significant attention devoted to the development of advanced technologies for achieving sustainable and environmentally friendly energy ...