Solar container performance of biochar materials

Solar-driven interfacial steam generation is emerging as a green and sustainable technology for potential applications in sterilization, desalination, ...

The natural composite trend emphasizes the use of renewable resources that possess enhanced qualities, boosting environmentally friendly solutions and minimizing the carbon footprint in ...

Over the past few decades, extensive research has been conducted to develop cost-effective and high-quality biochar for environmental biodegradation purposes. Pyrolysis has emerged ...

In this study, an innovative method for preparing biochar aimed at enhancing the QuEChERS pesticide residue analysis pretreatment technology was developed. The method is ecofriendly and cost ...

In this direction, biochar derived from abundantly available biomass feedstocks has been explored to develop form-stable, environmentally compatible energy storage materials. Biochar ...

In the paper, we crafted a unique eco-friendly composite phase change material (PCM) with superior leak-proof performance by integrating modified biochar, carbon nanotubes (CNTs) of ...

The stability performance of modified biochar was compared, indicating that raw materials, pyrolysis temperature and modification method were the key factors affecting the stability ...

This work focuses on the feasibility of using biochar, the solid by-product resulting from biomass pyrolysis, as carbon sequestrating additive in cementitious materials, with the aim of not ...

This section elucidates the materials and methods employed in an experimental investigation focusing on applying biobased coconut shell biochar powder combined with A46 PCM ...

The indoor and outdoor experiments demonstrate the first example of using green tide as a sustainable source for biochar-based solar absorbers and realizing costefficient and high-performance steam ...

The application of biomass-derived carbon materials (e.g., biochar) into soil is considered as an attractive and sustainable strategy to enhance carbon sequestration in soil and to ...

Daytime solar heating and nighttime radiative cooling are of great significance to global energy conservation and carbon neutrality because of their low cost, zero energy consumption and ...

Solar container performance of biochar materials

This study explored the potential of artificial aggregates prepared with varying biochar contents to replace natural aggregates in producing permeable paving materials from the ...

By delving into the latest advancements, challenges, and opportunities, this review seeks to advance the adoption of biochar-based materials as sustainable solutions in the rapidly ...

The current experimental investigation intends to develop leak-resistant form-stable phase change materials (FSPCM) to promote solar energy storage performance implementing biochar as carrier ...

The indoor and outdoor experiments demonstrate the first example of using green tide as a sustainable source for biochar-based solar absorbers ...

This study presents a novel and sustainable method for integrating octadecane phase change material (PCM) into traditional building materials like mortar and gypsum using vacuum- ...

Biochar is a carbon-rich material produced through pyrolysis, a process that heats organic waste materials in the absence of oxygen (Khater et al., 2024). Significant interest has been ...

However, the materials used in the solar absorption layer and substrate are typically expensive and difficult to produce, which is not conducive to large-scale application. Herein, a novel ...

Current research of counter-electrodes (CEs) for dye-sensitized solar cells (DSSCs) focuses mainly on searching for low-cost and mass-production suitable materials as an alternative to ...

?? Solar-driven interfacial steam generation is emerging as a green and sustainable technology for potential applications in sterilization, desalination, and water purification. Despite the encouraging ...

This study presents an innovative advancement by incorporating coconut shell biochar-enhanced phase change materials (CSePCM) into solar stills. The novelty of this approach lies in the integration of ...

Solar-driven interfacial steam generation is emerging as a green and sustainable technology for potential applications in sterilization, desalination, and water purification. Despite the encouraging progress to ...

This review provides researchers and energy decision makers, important information regarding to the most efficient pathways from feedstocks to biochar products by implementing of ...

It is anticipated that the results of this study will offer some theoretical support and a practical foundation for the development and advancement of solar thermal energy storage materials, ...

At the same time, by supporting semiconductor materials such as TiO 2 and ZnO, the light absorption capacity

and photocatalytic activity of biochar have been notably enhanced, allowing ...

Abstract Materials based on biochar have good application prospects in the field of solar interfacial evaporation. However, due to their amorphous structure, most biochar materials often ...

Biochar has been obtained from rice husks as well as ground nut shells, and is organic and eco-friendly. Two identical solar flat plate collectors have been used for comparison absorptivity ...

The development of technology for solar interface evaporation has a significant meaning for the sustainable use of water resources in remote regions. However, establishing a solar evaporator with ...

Modification of biochar is an excellent option to obtain synergistic effects and sustainable materials. The current comprehensive review article will focus on biochar, selected ...

Therefore, adjusting the microstructure of carbon-based materials is expected to further improve the performance of solar steam generation. However, there are relatively few related ...

ABSTRACT: Solar seawater desalination represents a sustainable approach to addressing the global freshwater shortage. Nevertheless, the high cost of photothermal materials ...

Web: https://www.schrijfexpressie.nl