Wood-based energy storage materials

In this paper, a marine bioinspired wood-based composite phase change materials (DW-CI/EP/PEG) with effective photothermal conversion and energy storage ...

Fabrication of thermal energy storage wood composite based on shape-stable phase change material, Liu, Jingyi, Jia, Shifang, Lin, Xianxian, Cao, Huimin, Wang, Wenbin ...

Therefore, the thermally induced flexible wood based on phase change material has great potential for building energy conservation and wearable energy storage devices due ...

Abstract Thermal energy storage wood (TESW) was fabricated by using graphene aerogel encapsulated polyethylene glycol (PEG) as phase change material and ...

In this work, low-cost, low density, three dimension, high thermal conductivity, carbonized wood-based composite phase change materials are fabricated by vacuum-assisted ...

The energy performance analysis was carried out for buildings incorporated with stearic and capric acid eutectic mixture of PCM with wood fiber-based insulation material (INS) ...

Wood-based composite phase change materials (PCMs) have considerable development potential in shape-stable thermal energy storage. However, Wood-based ...

Wood is one of the most abundant and sustainable materials on the earth and has attracted significant attention for topics in the field of energy storage [20, 21]. Wood is ...

Full Article Use of Phase Change Materials in Wood and Wood-Based Composites for Thermal Energy Storage: A Review Gustavo E. Rodríguez, a Cecilia Bustos Ávila, a, * and Alain ...

Anisotropic wood can serve as a substrate to facilitate the deposition and growth of micro/nano functional units for the development of anisotropic energy storage and ...

In this paper, we re-viewed the latest research progress in the application of wood material for electro-chemical energy storage, primarily in supercapacitors and various types of batteries, ...

The multifunctional wood-based phase change materials with flame-retardant and thermal energy storage capacity offer significant potential for energy conservation and storage ...

Then, the fluorescent CQDs and phase change materials are impregnated into delignified wood to fabricate a

multifunctional full-wood photoluminescent and photothermic ...

Further, we highlight some new directions in future research and offer future perspectives for next-generation energy storage and conversion devices based on wood-derived materials.

In a word, the wood-based phase change composite with efficient electro-thermal energy conversion and storage has great prospect for preheating of electronic ...

Abstract This work is aimed to produce a novel energy effective-composite material was prepared for building thermal energy storage (TES) purposes by incorporating ...

A similar approach was exploited by Li and co-workers [73], who obtained phase change energy storage woods exhibiting high photo-thermal conversion effectiveness through ...

Wood-based materials and derivatives with vertical microchannels have been developed and used to fabricate advanced electrode materials for LMBs. In this review, the ...

It is believed that such an eco-friendly and ultrastrong wood-based PCM with efficient solar energy utilization will be a novel option for building energy collection, storage, ...

In this study, a phase change energy storage wood (PCES-Wood) with efficient photo-heat conversion efficiency was obtained by impregnating polyethylene glycol based ...

The results presented above suggest that such decorative wood-based panels loaded with bio-based PCM have a great potential for thermal energy storage. They could be ...

This indicates that the delignified wood-based flexible carbon material is an ideal basic flexible self-supporting electrode material, which has a good application potential in the ...

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Wood-based materials are also ideal for eco-friendly energy storage due to their abundance, renewability, and sustainability. Researchers can create high-performance, ...

So in this study, the pH-induced color-change wood based on phase change materials was fabricated by using PEG as thermal energy storage materials, litmus as pH ...

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