

Photo-thermal conversion phase-change composite energy storage materials (PTCPCEsMs) are widely used in various industries because of their high thermal conductivity, ...

concrete that sweats to cool your building. Sounds like sci-fi? Welcome to phase change energy storage fiber concrete - the silent superhero of modern construction. This article targets:...

This study developed form-stable phase change materials (FSPCMs) with high energy storage density, superior flame retardancy, and effective smoke suppression by ...

Herein, we have used a hollow fiber membrane as a support layer material to encapsulate paraffin in order to prepare a phase change energy storage material. The phase change energy ...

Phase change materials (PCMs) have attracted tremendous attention in the field of thermal energy storage owing to the large energy storage density when going through the ...

This review provides a systematic overview of various carbon-based composite PCMs for thermal energy storage, transfer, conversion (solar-to-thermal, electro-to-thermal and ...

The distinctive thermal energy storage attributes inherent in phase change materials (PCMs) facilitate the reversible accumulation and discharge of significant thermal ...

Integrating phase change materials (PCMs) into stimuli-responsive fibers offers exciting opportunities for smart clothing to realize instant energy conversion/storage and temperature regulation. However, the production of ...

Abstract Phase change materials (PCM) offer significant advantages in battery thermal management (BTM) due to high energy storage, chemical stability, and zero-energy ...

By combining photo-thermal materials with PCMs, PCPCMs with high photo-thermal conversion efficiency can be prepared. Under the irradiation of sunlight, PCPCMs can ...

The over-reliance of human society on fossil fuels has triggered global climate change and an energy crisis, a severe situation that urgently demands the development of ...

3D carbon based phase change composites: A review on progress in fabrication strategies, thermal energy storage-conversion efficacy, prototypes, numerical models and ...

The intelligent fiber efficiently converts solar energy into heat energy through the photo-thermal coupling of CuNPs, subsequently inducing a spatial conformational change in the solid-solid ...

Phase change materials (PCMs) are capable of absorbing and releasing heat through the phase change procedure, thereby achieving local environmental temperature ...

Solid-solid phase change fibers are advantageous for thermal management and latent heat storage, because they don't have the issue of liquid leakage facing those common ...

Among them, the latent heat storage technology of phase change materials (PCMs) with high energy storage density, high phase change enthalpy, constant temperature ...

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