Solar Phase Change Thermal Energy Storage

This paper briefly reviews recently published studies between 2016 and 2023 that utilized phase change materials as thermal energy storage in different solar energy systems by collecting ...

This study reviews the integration of solar collectors with thermal energy storage (TES) tanks that utilize phase change materials (PCMs). It emphasizes their technologies and applications, ...

This article designs a high-altitude border guard post that can fully utilize the heat absorbed by solar collectors to continuously store thermal energy during the day and stably release ...

Most advancements have concentrated on improving absorption and thermal conductivity, while reducing the aforementioned unfavorable processes remains less explored.

PCESMs are employed in the construction industry for passive solar heating, thermal regulation, and energy-efficient building designs. They facilitate effective thermal dissipation in ...

The high thermal storage density of phase change materials (PCMs) has attracted considerable attention in solar energy applications.

This study numerically investigates a solar-driven humidification-dehumidification (HDH) desalination system integrated with phase change materials (PCMs) for thermal energy storage.

In this paper, we have overviewed the research conducted to date on phase change materials (PCMs) for photothermal power collection and storage, especially their applications as ...

All composites exhibit excellent thermal stability under a working temperature of 180 °C and form stability during phase change. Thermal energy storage-release test within 70 °C presents the ...

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In a recent issue of Angewandte Chemie, Chen et al. proposed a new concept of spatiotemporal phase change materials with high super-cooling to realize long-duration storage and intelligent release of ...

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