



Solar phase change thermal storage materials





Overview

Among the most feasible methods for storing solar energy involves the utilization of specific organic and inorganic substances, which are referred to as phase change materials (PCMs), which enable the latent heat of fusion to be harnessed [4]. Investigations into the use of phase change materials in solar applications for the purpose of storing thermal energy are still being carried out to upgrade the overall performance.



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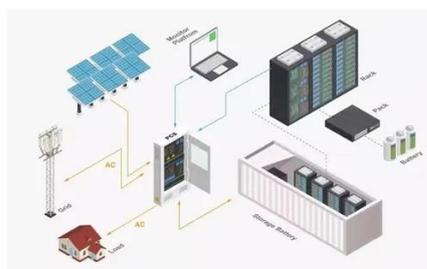


[Intelligent phase change materials for long-duration thermal ...](#)

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 ...

[Research Progress in the Thermal Energy Storage of Phase Change](#)

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 ...



[Transient modeling and performance evaluation of a solar](#)

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



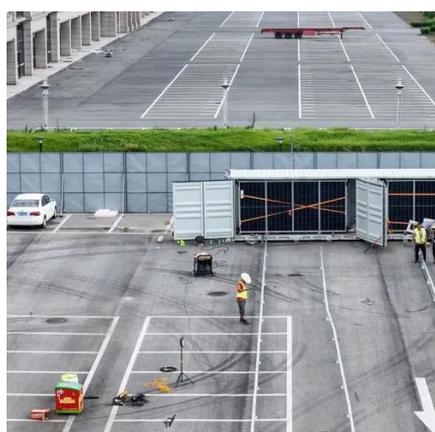
[Exploring the role of phase change materials in low-temperature solar](#)

Phase change materials (PCMs) have gained prominence due to their unique ability to store and release thermal energy through phase transition. The advantageous characteristic of ...



[Recent Advances, Development, and Impact of Using Phase Change](#)

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 ...



[Final report of Subtask C "Phase Change Materials" The overview](#)

"Phase Change Materials" This report is part of Subtask C of the Task 32 of the Solar Heating and Cooling Programme of the International Energy Agency dealing with solutions for storage based on ...



[Recent Advances in Phase Change Energy Storage Materials: ...](#)

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



[Research on the performance of phase change energy storage ...](#)



Solar thermal energy storage technology is categorized into sensible heat storage, latent heat storage, and chemical reaction heat storage according to the thermal energy storage method [2].



[Research progress on phase change heat storage exchangers for ...](#)

Phase change materials (PCMs) leverage their high energy density and thermal stability advantages in solar thermal storage systems to effectively address the temporal and spatial ...



[Study on Phase Change Materials' Heat Transfer Characteristics of](#)

Hence, the primary goal of this study is to experimentally investigate the energy storage capacity of two blended phase-change materials (paraffin and barium hydroxide octahydrate) through integration ...





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