Graphene phase-change energy storage

Thermal conductivity and energy storage capacity enhancement and bottleneck of shape-stabilized phase change composites with graphene foam and carbon nanotubes.

The reinforced photothermal effect of conjugated dye/graphene oxide-based phase change materials: fluorescence resonance energy transfer and applications in solar ...

The modified graphene phase change microcapsule is a kind of energy storage material with high thermal conductivity, strong energy storage capacity and good thermal cycle ...

Titanium dioxide/graphene oxide synergetic reinforced composite phase change materials with excellent thermal energy storage and photo-thermal performances were ...

Abstract Developing phase change materials (PCMs) with solar-thermal energy conversion and storage for wearable personal thermal management is of significance but ...

Hierarchical graphene foam-based phase change materials with enhanced thermal conductivity and shape stability for efficient solar-to-thermal energy conversion and ...

The demands for achieving microencapsulated phase-change materials (MEPCMs) with high thermal-energy storage ability have motivated increasing research ...

Request PDF | On Oct 1, 2016, Muhammad Amin and others published Thermal properties of beeswax/graphene phase change material as energy storage for building applications | Find, ...

Here we present an efficient thermal management system with high power and energy density by hyperbolic graphene phase change material, preventing the rapid heat accumulation of Li-ion ...

Graphene-based nanostructures, as either graphene nanosheets or graphene-based porous nanostructures, can improve the thermal conductivity of phase change materials ...

Phase change materials (PCMs) are considered one of the most promising energy storage methods owing to their beneficial effects on a larger latent heat, smaller volume ...

In this study, high energy storage polyurea (PUA) microPCMs for photothermal storage were fabricated from a Pickering emulsion consisting of bio-derived and sustainable ...

The preparation of phase change materials (PCMs) with high energy storage, thermal conductivity, and

photothermal conversion capability is essential for improving solar ...

Thermal energy storage (TES) systems based on phase change materials (PCMs) have increased in prominence over the past two decades, not only because of their outstanding heat ...

Polyethylene glycol/graphene oxide aerogel shape-stabilized phase change materials for photo-to-thermal energy conversion and storage via tuning the oxidation degree ...

Micro-nanocavity graphene/paraffin nanocomposites (MNGPNs) are emerging as promising phase change materials for passive thermal management in electronics, utilizing the superior ...

Abstract The adoption of phase change materials (PCMs) for thermal energy storage in low- and medium-temperature settings is witnessing a notable surge. However, the ...

Abstract Phase-change materials (PCMs) are essential for advancing clean energy technologies and enhancing energy efficiency. However, pure PCMs have problems ...

The thermal energy storage concrete (TESC) incorporating phase change materials (PCM) exhibits promising prospects for building energy conservation due to its ...

To enhance the solar energy utilization efficiency of microencapsulated phase change materials (PCMs), a novel composite system was designed by combination of ...

Latent heat storage is a more promising type of heat storage compared with common sensible heat storage methods based on the heat capacity [2]. Phase change ...

Published in: 2023 10th International Conference on Power and Energy Systems Engineering (CPESE) Article #: Date of Conference: 08-10 September 2023 Date Added to IEEE Xplore: 03 ...

Due to the intermittent nature of solar energy, researchers and scientists are working to develop thermal energy storage (TES) systems for effective utilization of solar ...

In this paper, we report novel magnetic- and sunlight-driven energy conversion and storage nanocomposites based on Fe 3 O 4 -functionalized graphene nanosheet (Fe 3 O 4 -GNS) ...

<p>Energy storage and conservation are receiving increased attention due to rising global energy demands. Therefore, the development of energy storage materials is crucial. Thermal energy ...

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