

Is MXene a suitable phase change material for thermal energy storage?

Novel light-driven and electro-driven polyethylene glycol/two-dimensional MXene form-stable phase change material with enhanced thermal conductivity and electrical conductivity for thermal energy storage *Compos. B Eng.*, 177(2019), Article 107372, 10.1016/j.compositesb.2019.107372

How MXene/peg composites enable energy storage in a photothermal-driven phase transition conversion process?

PCMs composited with MXene enable energy storage through a photothermal-driven phase transition conversion process [149,150]. Chen et al. prepared the MXene framework using the template method. And then, MXene/PEG composites were fabricated by the vacuum impregnation method.

Are phase change materials effective carriers for thermal energy storage and conversion?

Phase change materials (PCMs) are effective carriers for thermal energy storage and conversion, which is one of the most practical media for improving energy efficiency. Improving the storage efficiency of PCMs and achieving multi-source driven storage conversion are effective methods to broaden the application of PCMs.

What is MXene confined in shape-stabilized phase change material?

[Google Scholar] [CrossRef] Liu, H.; Fu, R.; Su, X.; Wu, B.; Wang, H.; Xu, Y.; Liu, X. MXene confined in shape-stabilized phase change material combining enhanced electromagnetic interference shielding and thermal management capability.

Do MXene-based TM materials influence thermal energy storage and conversion?

The findings suggest that MXene-based TM materials have remarkable features that significantly influence thermal energy storage and conversion and present opportunities for further research in efficiently using these materials. 1. Introduction

How does MXene affect the enthalpy of polyethylene glycol?

The low content of MXene has a limited impact on the phase transition temperature and enthalpy of polyethylene glycol, with an enthalpy retention rate ranging from 89.2 to 96.5% for 90-97 wt% polyethylene glycol loadings. MXene aerogels greatly improve the leaking resistance of polyethylene glycol above its melting point of 60 °C, even at 100 °C.

The latent heat storage of PCMs has gained increasing attention in the solar energy application field due to their high thermal energy storage density. However, the lack of energy conversion ability of the organic ...

Here we report a multifunctional phase change composite in which the energy storage can be driven by small voltages (e.g. 1.5 V) or light illumination with high electro-to ...

DOI: 10.1016/j.solmat.2019.110229 Corpus ID: 209727648; MXene aerogel-based phase change materials toward solar energy conversion @article{Lin2020MXeneAP, title={MXene aerogel ...

The MXene aerogel can absorb sunlight and convert the light into heat at a high efficiency, while PEG6000 can store the produced heat via solid-liquid phase change, making the x P@M composite a promising ...

This can increase thermal energy storage efficiency up to 94.5% based on the actual solar radiation, which is higher than that of the normal PCM. ... In addition, the phase change ...

6 ???&#0183; Therefore, porous cellulose-based phase change aerogels can be used as acoustic material with shape stability and acoustic-thermal conversion and energy storage. Herein, ...

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