Phase change energy storage heat pipe

Abbreviations: HP, heat pipe; HP-MF, heat pipe-metal foam; LHTES, latent heat thermal energy storage; MF, metal foam; PCM, phase change material. 2 of 12 Energy Storage, 2024 and with ...

In this paper, a heat pipe-assisted phase change material (PCM) based battery thermal management (BTM) system is designed to fulfill the comprehensive energy utilization ...

The system is designed to recover and store waste thermal energy from residual fluids using heat pipes for recovery and an environmentally friendly phase change material for ...

The thermal performance of a phase change material (PCM) heat pipe system is experimentally analysed using acetone as heat pipe fluid in a heat load range of 10-50 W at different flow rates ...

Qiu S, Galbraith R, White M. Phase change material thermal energy storage system design and optimization. In: ASME 2013 7th International Conference on Energy ...

Several studies have concentrated on enhancing LHTES systems by adding fins into the shell and tube PCM heat exchangers. Ajarostaghi et al. [38] carried out a detailed computational ...

Currently, there is great interest in producing thermal energy (heat) from renewable sources and storing this energy in a suitable system. The use of a latent heat ...

Pulsating heat pipes (PHPs) were fabricated and used in the thermal storage system as heat transfer devices between PCM and saline water due to their high conductivity, ...

Although previous research has looked into how heat pipe layouts affect LHTES, there is still a dearth of research on fin geometry optimization for boosted heat transfer. In this ...

The burning of fossil fuels pollutes the atmosphere, and utilizing renewable energy is needed to minimize such impacts. Thermal energy storage (TES) using PCM can ...

The thermal performance of a phase change material-heat pipe system is experimentally analysed using acetone as heat pipe fluid in a heat load range of 10-50W at different flow rates of the ...

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