
It employs the Cattaneo-Christov heat flux model to capture non-Fourier thermal behavior. NEPCMs, composed of n - eicosane as the phase change core and polyvinyl ...

The United States Advanced Battery Consortium (USABC) and its partners--including Johnson Controls Inc., Saft, A123 Systems, Compact Power Incorporated, EnerDel, and other ...

The research findings can accelerate the large-scale application of heat storage systems in renewable energy integration and provide a core technological foundation for ...

Based on the thermal characteristics and cooling requirements of semiconductor devices, this study systematically establishes common guidelines for thermal management ...

We studied the heat transfer characteristics of a phase change material (PCM) based thermal energy storage (TES) device for transport air conditioning applications. The ...

Advancements in thermal energy storage (TES) technology are contributing to the sustainable development of human society by enhancing thermal utilization efficiency, ...

The performance of TES systems depends on the heat flux during charging and discharging cycles. During charging, the heat flux is used to store thermal energy in the TES ...

Detailed experimental investigation is presented for the heat transfer characteristics of an inclined shell-and-tube phase-change thermal energy storage unit.

Fluid flow and heat transport analysis of nano-encapsulated phase change materials inside a closed enclosure is studied by several authors [27, 28, 29].

In addition, the energy storage device includes a plurality of heat flux components (e.g. heaters or cooling devices) arranged with the side walls and configured to reduce a temperature...

Ultimately, short-term and long-term thermal energy storage processes have been discussed as well as the capability of thermal energy storage technology in the thermal ...

In the field of electronics thermal management (TM), there has already been a lot of work done to create cooling options that guarantee steady-state performance. However, ...

In this work, the effects of heat transfer fluid (HTF) temperature and flow velocity on energy storage/release characteristic in shell and tube phase change heat exchanger were ...

The use of low-grade industrial waste heat for building heating could facilitate the decarbonization of heat sector, which accounts for a large share of energy consumption ...

Thermal resistance investigation demonstrated that this device provides exceptional insulating efficacy and heat dissipation rate. This study utilizes an aluminum-silicon alloy as ...

Rashid et al. [36] presented a critical review on bio-based phase change materials heat transport capabilities and concluded that bio-based PCMs are widely used in solar ...

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