



WALMER ENERGY

Energy Storage Container Thermal Management Patent





Overview

What is a container energy storage system?

Containerized energy storage systems play an important role in the transmission, distribution and utilization of energy such as thermal, wind and solar power [3, 4]. Lithium batteries are widely used in container energy storage systems because of their high energy density, long service life and large output power [5, 6].

What is container energy storage temperature control system?

The proposed container energy storage temperature control system integrates the vapor compression refrigeration cycle, the vapor pump heat pipe cycle and the low condensing temperature heat pump cycle, adopts variable frequency, variable volume and variable pressure ratio compressor, and the system is simple and reliable in mode switching.

What is a composite cooling system for energy storage containers?

Fig. 1 (a) shows the schematic diagram of the proposed composite cooling system for energy storage containers. The liquid cooling system conveys the low temperature coolant to the cold plate of the battery through the water pump to absorb the heat of the energy storage battery during the charging/discharging process.

What is the COP of a container energy storage temperature control system?

It is found that the COP of the proposed temperature control system reaches 3.3. With the decrease of outdoor temperature, the COP of the proposed container energy storage temperature control system gradually increases, and the COP difference with conventional air conditioning gradually increases.



Energy Storage Container Thermal Management Patent

US Patent for Thermal management system for an energy storage container

A thermal management system for an energy storage container includes an enclosed compartment containing an energy storage unit, an air temperature control unit configured to ...

Thermal management method and system for container energy storage

Nov 16, 2021 · An energy storage battery and heat management technology, applied in secondary batteries, circuits, electrical components, etc., can solve the problems of high energy ...

WO/2025/246357 ENERGY STORAGE SYSTEM AND THERMAL MANAGEMENT ...

Dec 30, 2024 · An energy storage system (1000) and a thermal management method. The energy storage system (1000) comprises first energy storage apparatuses (200) and a second energy ...

U.S. Patent for Systems for managing thermal energy within a thermal

Jun 23, 2022 · A thermal storage solution system is disclosed herein. The system includes an insulated container having a thermal storage medium, a heating element configured to heat ...

THERMAL MANAGEMENT SYSTEM FOR ENERGY STORAGE DEVICE, AND ENERGY STORAGE

Sep 27, 2023 · [0003] In order to facilitate the movement and transportation of energy storage devices, a container-type energy storage device has appeared in the related art. A plurality of ...

118364623 Container type flow battery thermal management ...

Apr 16, 2024 · The invention belongs to the technical field of energy storage, and discloses a configuration method and device for a thermal management system of a container type flow ...

WO/2024/100669 THERMAL ENERGY STORAGE SYSTEM

Sep 11, 2023 · A system permitting efficient heat pump, storage of thermal energy, and retrieval of this stored thermal energy back to electricity upon demand. The system operates in two ...

A thermal management system for an energy storage battery container

May 1, 2023 · The existing thermal runaway and barrel effect of energy storage container with multiple battery packs have become a hot topic of research. This paper innovatively proposes ...

Luwen Technology Secures Patent for High-Efficiency

Oct 28, 2025 · The patent abstract indicates that this utility model relates to the field of energy storage devices, specifically a high-efficiency thermal management system. The device ...

Integrated cooling system with multiple operating modes for ...

Apr 15, 2025 · The proposed energy storage container temperature control system provides



new insights into energy saving and emission reduction in the field of energy storage.

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