Loss of ice storage energy

Highlights o We design efficient control strategies for HVAC systems with ice cold thermal energy storage. o A model-based approach is employed. o Standard control strategies are ...

This paper proposes a new energy management strategy that reduces the investment and loss of the battery energy storage system (BESS) by applying ice storage air-conditioning (ISAC) to the ...

This paper details the calculation of the heat loss coefficients of an ice thermal storage using a limited set of monitored parameters (sector temperature, height of fluid) that could be collected from existing ...

Abstract The effects of global climate change on human production and life are significant. It is important to explore how ice thermal storage system (ITSS) will respond to climate ...

The seasonal ice storage system automatically charges winter cold energy in the form of ice. In summer, the stored ice is extracted for cooling, and then the melting ice is used as a chilling ...

The main objective of this study is to couple the solar photovoltaic cold storage with Cold Thermal Energy Storage technology. The internal ice-melting coil energy storage system used ...

The available energy of each ice storage was determined by the fraction of ice stored in the vessel. The heat loss coefficient was determined using an optimisation algorithm. Using this approach it was ...

Investigate the influence of cutting-edge technologies such as ice storage, power-to-gas (P2G) converters, and various storage mechanisms on the daily operational planning of the ...

The thermal performance of the ice-storage cooling device used in the underground mine refuge chamber is poor, which causes a waste of energy. Therefore, it is necessary to improve ...

In combination with heat pumps and solar collectors, ice storages present a large advantage in comparison with other conventional heating and cooling systems. In this work, the mathematical ...

Ice slurry is a key material in phase change cold storage technology. However, its application is often hindered by issues like significant supercooling, poor thermal conductivity, and ...

Ice storage enhanced by biomimetic fins in spherical capsules is studied numerically based on enthalpy-porosity method. The evolution of water/ice interface, the temperature variation, ...

This study aims to investigate the evaporative cooling performance characteristics of ice thermal energy

storage (ITES) with direct contact discharging for food cold storage to minimize ...

In this paper, monitored data was collected from existing sensors installed in two ice storage installations and used to determine the heat loss coefficients during the different storage ...

Cold thermal energy storage systems, especially those utilizing phase change materials, offer a promising solution to mitigate these challenges. This study presents a comprehensive ...

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