Phase change energy storage raised floor

In this paper, a novel model of double-layer phase-change radiant floor for energy storage was established considering the phase change characteristics of PCM in the process ...

This system incorporates two layers of phase change materials (PCMs) with distinct phase change temperatures as the thermal energy storage medium. A coupled heat ...

This paper reviewed the current thermal storage technology and phase?change floor radiant heating technology and briefly discussed the influence of physical and chemical properties of ...

??? ?????? ?? Simulation and optimization research of double energy storage floor based on heat transfer characteristic of phase change materials ????????????? ...

Through the use of phase?change energy?storage floor, a large amount of latent heat can be stored and released to reach the purpose of cutting down the peak load of the heating ...

In this study, the effects of thermal comfort and energy savings were analyzed after applying a phase change material (PCM) to floor heating, which can be used to reduce the peak ...

The phase change greenhouse, relative to its ordinary counterpart, demonstrated superior insulation effects, creating a warm environment conducive to plant growth. This ...

The integration of Phase Change Materials (PCMs) into solar thermal energy storage systems represents a pivotal advancement in the pursuit of sustainable urban energy solutions, ...

Phase change floor (PCF) integrated with phase change materials (PCMs) can achieve latent heat storage, reduce system energy consumption, and improve indoor thermal ...

The floor heating system with phase change materials (PCMs) for thermal storage is an effective approach to increase the floor thermal capacity and reduce indoor temperature ...

At present, buildings constitute over 30 % of the overall energy consumption, while CO 2 emissions stemming from building-related industries and equipment comprise ...

This study aims to investigate the performance differences of various phase change energy storage materials (PCMs) in radiant floor heating systems through numerical ...

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According to statistics, the construction industry accounts for more than 40% of the global energy consumption, and the form of building energy conservation is urgent and has great potential. ...

Compared with sensible heat storage, the latent heat storage method represented by phase change materials (PCMs) has the advantages of high energy storage ...

Abstract Greenhouses represent one of the largest energy-demanding sectors, requiring energy for indoor environment control for plant growth and crop yield. Thermal energy ...

Lower thermal conductivity of the decoration layer is helpful in application. Application of phase change material (PCM) floor in a solar water heating system can greatly ...

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