Phosphogypsum energy storage material

1. Introduction. Energy consumption has increased with the rapid economic growth, and its main form is building energy consumption [1,2].At present, heat- and energy-storage materials are widely used in energy-saving building materials to alleviate the problem of building energy consumption [].Phase-change materials can store and release a large amount ...

This study investigates the properties of novel heat storage gypsum composites composed of waste Hemihydrate phosphogypsum (HP) incorporated with Ethyl Palmitate (EP) Phase Change Material (PCM) at varying concentrations of 25 wt %, 50 wt %, and 75 wt %.

The resulting radiation dose caused by phosphogypsum used as a construction or plaster material can be considered to be negligible [18,19]. Sfar et al. [20] measured the activity of natural radioelements in three Tunisian PGs with different storage times using gamma spectrometry. They noted a decreasing trend of

As phosphogypsum constitutes a large amount of solid waste material, its purification treatment and comprehensive utilization have close connection with economic development and ecological environmental protection. For the moment, the storage quantity of phosphogypsum is still rising as a result of the increasing phosphate fertilizer production to ...

Sensible heat, latent heat, and chemical energy storage are the three main energy storage methods [13].Sensible heat energy storage is used less frequently due to its low energy storage efficiency and potential for temperature variations in the heat storage material [14] emical energy storage involves chemical reactions of chemical reagents to store and ...

In this paper, sodium sulfate decahydrate (SSD) with a phase transition temperature of 32 °C was selected as the phase change energy storage material. However, SSD has the problems of large degree of supercooling, obvious phase stratification, and low thermal conductivity. To address these issues, a new SSD composite phase change energy storage ...

The temperature range of the gypsum-based phase-change energy-storage material mixed with 50% CPCM could reach 7.4 °C and 12.4 °C in the process of heat storage and release, respectively. ... De?irmenci, N. Utilization of phosphogypsum as raw and calcined material in manufacturing of building products. Constr. Build.

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