

FACTORS AFFECTING LATENT HEAT STORAGE



Why is latent heat storage important? Latent heat storage has allured great attention because it provides the potential to achieve energy savings and effective utilization[1???3]. The latent heat storage is also known as phase change heat storage, which is accomplished by absorbing and releasing thermal energy during phase transition.



Can latent heat thermal energy storage be used in buildings? Application of latent heat thermal energy storage in buildings: state-of-the-art and outlook Phase change materials for building applications: a state-of-the-art review Review on thermal performance of phase change energy storage building envelope Review on thermal energy storage with phase change materials (PCMs) in building applications



What is a latent heat storage (LHS)? Latent heat storages (LHS) on the other hand store energy by making use of the phase changing process of a substance by melting or vaporization without a significant temperature change. Such materials are referred to as phase change materials (PCM) [40 :p.141].



What is the difference between a phase change material and a latent storage? On the other hand, latent storage is mainly dependent on phase change from solid to liquid and vice versa. Phase change materials (PCMs) change their phase at constant temperature (melting or solidification temperature). It stores the heat as the latent heat of change in phase is very high compared to the sensible heat.



What is latent heat thermal energy storage (LHTES)? Latent heat thermal energy storage (LHTES) units use phase change materials (PCM) that store or release energy by changing their states. PCMs have thermodynamic requirements such as melting point in the desired temperature range and high latent heat.

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What is latent heat? Latent heat provides substantially high energy storage density and maintains small temperature difference between the storage and release of heat. LHSMs can be of the form Solid???Solid (S???S), Solid???Liquid (S???L), Solid???Gas (S???G) and Liquid???Gas (L???G) based on the transformation type.



Factors Affecting the Packed Bed Latent Heat Storage System Performance. The various factors affecting the performance of the PBLHS system can be categorized into structural and material factors. As a PBLHS system ???



Latent Heat Storage (LHS) in PCMs is the most suitable solution for thermal energy storage due to their high latent heat. In this review, special attention is given to recent ???



The factors influencing the high latent heat of Phase Change Energy Storage (PCES) materials include the temperature difference between the heat transfer fluid (HTF) and the PCM, the ???



Sharma et al. [1] studied the effects of PCMs physical properties, heat exchanger materials and patterns on the performance of a latent heat storage system with fatty acids as ???

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Scholars have come up with various factors that affect the outcome of these battles. The principles behind a latent heat storage system are pretty similar to that of a ???



As the water and heat storage term, soil moisture has long-term memory on time scales ranging from several weeks to months. With the initial wet soil moisture anomalies, the main factors affecting latent heat flux ???



This study explicitly targeted the literature gap regarding the optimal fin dimensions and their spacing in rectangular latent heat storage systems. The integration of RSM-based ???