

What are the main components of a swimming pool thermal energy storage system?

Main components of a Swimming pool thermal energy storage system . Ice slurry storage has been selected for this system because it increases the heat transfer, as ice is not built up in the heat exchanger, which reduces the investment cost for freezing the water in the pool.

Can thermal energy storage reduce solar energy production?

One challenge facing the widespread use of solar energy is reduced or curtailed energy production when the sun sets or is blocked by clouds. Thermal energy storage provides a workable solution to this challenge.

Can swimming pools store thermal energy for heating the water?

Application of swimming pools for storing thermal energy for heating the water is discussed in several studies,. Ice slurry is a suitable media for cool storage as the phase change between ice and water can provide a significant latent energy for cooling .

What is a solar thermal energy system?

Solar thermal energy systems harness the sun's power to generate heat for various applications,including water heating,electricity generation,and industrial processes. These systems are characterised by their ability to efficiently convert sunlight into thermal energy,making them a vital component in the transition to renewable energy sources.

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This study presents a novel open-type solar photovoltaic/thermal (PV/T) integrated swimming pool (SSP-PV/T) system designed to enhance the efficient u...

Summary In this study, utilizing a renewable energy system was proposed to eliminate conventional sources used for swimming pool heating applications. The proposed configuration ...

The rise in distributed renewable energy generation creates a growing need to find viable solutions for energy storage to match energy demand and supply at any time. This paper evaluates ...

A distinguishing feature of concentrating solar power among other renewable technologies is its ability to include thermal energy storage at the point of power generation to handle the ...

Figure 1 Subsurface storage system for thermal energy (Image courtesy SUETRI-A) Solar collectors generate saturated steam, which is injected into underground reservoirs (ideally warmed ...

Thermal energy storage optimization strengthens concentrated solar power reliability and advances the sustainable energy transition for the future. This study is a necessary foundation that ...

This Collection welcomes original research articles on solar thermal energy systems, focusing on the latest developments in materials, system designs, and practical applications.

This paper evaluates the possibility of using swimming pools as a long-term cooling energy storage solution, i.e., Swimming Pool Thermal Energy Storage (SPTES).

To address the growing problem of pollution and global warming, it is necessary to steer the development of innovative technologies towards systems with minimal carbon dioxide production. ...

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