

Research on circulation issues in solar container systems

Publications NREL solar researchers actively publish their latest scientific findings and breakthroughs in a newsletter, journal articles, conference papers, technical reports, and ...

A novel application of powders relies on their use as heat transfer medium for heat capture, conveying and storage. The use of powders as heat transfer fluid in concentrated solar ...

Direct circulation systems for residential solar water heating: how they work, benefits, drawbacks, and alternatives for efficient energy use.

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PDF | On Jan 1, 2025, Yumei Lv and others published Numerical Study on Natural Circulation System under Various Cooling Mediums | Find, read and cite all the ...

However, there are not many systems combining solar energy with house insulation. In the night, the wall temperature loss is too fast, the use of air conditioning is not environmental ...

This study defines and assesses the selection criteria for suitable particulate materials to be used in an upflow bubbling fluidized bed (UBFB) or dense up-flow powder circulation system for ...

Abstract. The most common natural flow water heating systems are in one-ended inclined pipes today. This study aims to investigate the natural circulation solar energy system ...

Cooling the operating surface is a key operational factor to take into consideration to achieve higher efficiency when operating solar photovoltaic systems. Proper cooling can improve the ...

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A comprehensive review of the various designs, details of construction and operational principles of the wide variety of practically-realised designs of solar-energy drying systems reported ...

ater heating (SWH) systems because it could address the freezing problem during winter. Compared to the normal type, forced-circulation wickless LTs have significant advanta

The use of powders as heat transfer fluid in concentrated solar systems is discussed with respect to current technologies. The specific application reported upon is the use of powder ...

Article history: This paper presents a validated TRNSYS model for forced circulation solar water heating systems used in 70 Received 19 October 2010 temperate climates.

This work aims to investigate the thermodynamic effect of phase change material integration within vertical storage tanks that are connected to forced circulation solar water heaters, ...

This study proposed a hydroponic system with the capacity to acquire high-resolution in situ mass data for non-destructive evaluation of water ...

Among the cited systems, batch and continuous operations with particle conveying loops are discussed. A short summary of relevant particle-related properties, and their use as heat transfer medium is ...

The present paper attempts to test how accurate TRNSYS simulation program can be in simulating different configuration of forced circulation solar water heating systems, and to inspect the ...

Abstract: Solar meridional circulation, which manifests as poleward flow near the surface, is a relatively weak flow. While meridional circulation has been measured through various ...

As solar desalination is a growing research topic in the present health hazardous issues of lack of potable water, the present work aims at making an exhaustive survey of all the ...

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Abstract A water circulation system of pipe network formed by roof truss for heat collection and release was developed to enhance the indoor temperature at night in Chinese solar ...

The present work describes a study performed to evaluate the logic implemented to control the forced

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circulation process inside of two 5 m 3 storage tanks used on a solar water heating ...

The review research is concluded by scale-up data and challenges, and provides a preliminary view into the prospects and the overall economy of the system. Market prospects for both novel concentrated ...

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Here, we try to establish upper bounds on photovoltaic and system performance, covering a broad range of cell temperature and concentration levels, for single- and multi-junction cells operating at the ...

In recent years, research communities have shown significant interest in solar energy systems and their cooling. While using cells to generate ...

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