

Particularly, solar-driven atmospheric water generators based on sequential adsorption-desorption processes are attracting much attention. However, incomplete daytime desorption is the limiting ...

Abstract The primary objective of this review is to provide fundamental understandings of the solar adsorption systems and to give useful guidelines regarding designs parameters of ...

Adsorption-based atmospheric water harvesting (AWH) technology shows great potential to alleviate the growing global freshwater shortage, especially in areas without grid coverage. The ...

Afterward, a detailed appraisal of state-of-the-art sorption materials, such as activated carbon fiber, zeolite, silica gel, metal-organic frameworks, calcium chloride with various host materials, and ...

The present work presents a literature review of solar-driven adsorption desalination systems (ADS) from the perspective of hybrid systems, adsorption materials, and system configurations.

This review paper covers progressive developments in solar adsorption cooling technology with reference to new adsorbent materials and thermal cycle patterns for upgrading the ...

A specific type of PMMA (Steeneken et al., 1995) was given additional attention, because of its usefulness in experiments on UV effects on iron speciation, due to its UV-transparency ...

Among these heat storage materials, the solid adsorption materials that use water as the adsorbate have gained widespread interest due to their safety, environmental friendliness, and particularly their ...

Abstract The transient analysis and performance prediction of a solid adsorption solar refrigerator, using activated carbon/methanol adsorbent/adsorbate pair are presented. The ...

Recently, the adsorption-based atmospheric water harvesting (AWH) systems are one of the most efficient solutions for water extraction from the atmosphere due to their ability to work ...

Solar powered adsorption refrigeration contains only three major components (container of adsorbents, condenser and evaporator) and functions as follows. The adsorbent is packed in a ...

The adsorption solar refrigerator in its simplest form is a closed system composed of the container of adsorbents and adsorbate (sorption bed), which serves as a solar collector, a condenser and an ...

In comparison to other adsorbent materials, aminosilica exhibits outstanding carbon dioxide adsorption

capacity, yet still requires a substantial amount of energy for complete regeneration.

The present paper focuses on the iron adsorption to container materials in small-volume experiments by using the radio-iron ^{55}Fe in a kinetic approach and aims to gain more insight ...

The acrylic opening, Fig. 1 (B), is made as wide in dimensions as the adsorption material surface area and on the sides of the cover a reflective material (Tin) is installed to prevent ...

Solar absorption refrigeration system requires a continuous operation in many of its applications (food storage, space cooling etc), which in turn requires an efficient TES system utilizing ...

Adsorption thermal storage, which can store heat like a battery, reserve it when it is unneeded and release thermal energy on users' demands, has been acknowledged as a promising ...

Consequently, selection and optimization of solar collector is a vital role in the adsorption refrigeration system. Several studies have also been carried out, both experimentally and theoretically for ...

This paper presents a study of the impact of four different types of composite materials on the regulation of the interior ambience of an agri-food preservation unit by solar cold produced by ...

This study introduces a novel utilization of two promising adsorbent materials (Bentonite/ CaCl_2 (Bent/ CaCl_2) and Max/ CaCl_2) in the adsorption cooling desalination system driven by ...

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