

Can solar energy drive liquid dehumidification with absorption refrigeration?

A novel hybrid system coupled liquid dehumidification with absorption refrigeration driven by solar energy is proposed. Traditional and advanced exergy and exergoeconomic analyses of the system are conducted to ascertain the degree of irreversibility and potential improvement for each component.

Can solar energy be used for dehumidification of humid air?

Functioning of dehumidification, cooling and air-conditioning systems using various solid desiccant with focus on the use of solar energy for dehumidification of humid air and regeneration of solid desiccant wheel are presented. The researches and developments on novel solid desiccant components are discussed.

Can solar-driven desiccant systems be used for air dehumidification?

The advancements in solar-driven desiccant systems for a wide range of applications besides air dehumidificationsuch as drying,desalination,atmospheric water harvesting,and wastewater treatment have been discussed.

Can solar energy be used for rotating belt dehumidification?

Sleiman et al. proposed a two-stage direct solar regeneration system for rotating belt dehumidification. The operational air flow rates varied between 0.055 kg/s to 0.08 kg/s with a minimal cutoff at 0.0392 kg/s. Total energy consumption during the effective working season was 78.8 kWh.

This study numerically investigates a solar-driven humidification-dehumidification (HDH) desalination system integrated with phase change materials (PCMs) for thermal energy storage.

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Use of solar energy for cooling purposes can reduce load on conventional systems. This review research paper gives description of solid desiccant dehumidification system (DEC

Humidification-dehumidification (HDH) is considered a promising method for treating high-salinity water. This study investigates a solar-driven HDH system that integrates a novel solar water ...

This paper presents feedback on the experimental research on different desiccant systems and their integration with external systems as an energy-saving approach. The review focuses on ...

The performance of a solar-thermal humidification-dehumidification (STHDH) desalination system is influenced by several critical factors, including air and seawater flow rates, temperatures, ...

Solar thermal-powered desiccant dehumidification systems are attracting attention for cooling load-dominated climates. However, their performance varies substantially from place to place ...

The current paper experimentally studied the performance of solar-driven internally cooled liquid desiccant system for hot and humid climates using  $\text{CaCl}_2$  as a liquid desiccant. The system is ...

Targeting the arid regions with high solar irradiance, solar-powered thermal desalination techniques have opportunities. This study introduces an innovative approach to improve the ...

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