Solar Intelligent Dehumidification System

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.

Are solar-driven dehumidification systems sustainable?
Solar-driven dehumidification systems,as a clean and sustainabletechnology,have attracted much attention. To expand its applications,it is necessary to improve its dehumidification efficiency and range. This study develops a solar-driven hybrid dehumidification system integrated with spectrum splitting technology.

Should solar-powered humidifiers be used in HDh systems?
Emphasizing solar-powered humidifiers in HDH systems presents an innovative solutionper the urgent demand for sustainable freshwater sources utilizing abundant energy resources.

Can a solar-driven dehumidification system improve exergy efficiency?
Compared to existing solar-driven or solar-assisted dehumidification systems,the proposed configuration can not only achieve a broad dehumidification range with ultra-dry air below 1 g/kg but also increase exergy efficiency by 100 %when producing air with a humidity ratio of 6 g/kg.

This work explores the advancement and potential of solar-powered humidification-dehumidification (HDH) desalination systems, addressing the critical challenge ...

With the aim of establishing a zero-energy housing (ZEH), an intelligent envelope system composed of a passive dehumidification and solar collection system (PDSC system) ...

The demand for energy-saving climate control systems has led to the development of solar-powered dehumidifiers. This system utilizes solar power to extract excess moisture ...

The hollow fiber membrane modules act as dehumidifiers and regenerators to avoid gas-liquid entrainment problems in direct-contact dehumidification systems. A solar-driven hollow fiber ...

Solar-driven dehumidification systems, as a clean and sustainable technology, have attracted much attention. To expand its applications, it is necessa...

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Spirits ????? ?????????? ?????? ???????????

The article covers modifications and advances in desiccant materials, existing solid and liquid desiccant dehumidification systems, and hybridization techniques particularly ...

Solar and waste heat-powered humidification dehumidification (HDH) desalination systems become essential due to the severe impacts of global warming and water shortages. ...

Abstract. With the aim of establishing a zero-energy housing (ZEH), an intelligent envelope system composed of a passive dehumidification and solar collection system (PDSC system) ...

A novel hybrid system coupled liquid dehumidification with absorption refrigeration driven by solar energy is proposed. Traditional and advanced exergy and exergoeconomic ...

Passive dehumidification and solar collection (PDSC) employs fibrous insulation materials with excellent moisture adsorption and desorption characteristics to conduct ...

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