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Title: Solar dehumidification cooling system

Generated on: 2026-03-28 10:30:14

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To demonstrate the economic feasibility of the proposed innovative configuration of a desiccant air conditioning system in this study, a comprehensive economic analysis was ...

A solar-powered cascade system is proposed for dehumidification, cooling and heating in hot summer and cold winter areas of China. To evaluate the energy, environmental ...

The framework of a solar-powered desiccant cooling system involves integrating solar energy collection, desiccant dehumidification, desiccant regeneration, cooling techniques, and air ...

In this work, an exergy analysis of the solar air conditioning system with a rotating wheel for air dehumidification, which is used in comfort air conditioning was performed. Exergy ...

Abstract Conventional vapor-compression cooling for outdoor air dehumidification is energy intensive, especially in hot and humid regions. To reduce energy consumption, ...

In conclusion, the solar-assisted desiccant with the IEC system has become an advanced and sustainable dehumidification and cooling technology thanks to its advantages of ...

The results indicate that the sensible cooling capacity, the latent cooling capacity, and the COP decrease monotonically as the rotational speed of the desiccant wheel ...

Desiccant cooling and dehumidification have received much attention as viable alternatives for the air conditioning of buildings. Over the last 15 years, technological advances have occurred ...

Interestingly, even with reduced cooling load of more than 25% with respect to cooling coil DOAS, ERW-aided unit offers excellent solar fraction, without significantly ...

Solar thermal applications in combination with other renewable-energy-dependent cooling practices have generated a huge interest towards sustainable solutions, keeping in ...

Solar evaporation dehumidification cooling system makes use of low-grade solar energy as heat resource, and its development and utilization for energy conservation and ...

The thermal energy captured by solar collectors is used for desiccant solution regeneration. Indoor return air is cooled by fan coils of a mechanical cooling system. The ...

Experimental study of dehumidification performance and solar thermal energy enhancement properties on a dehumidification system using desiccant coated heat exchanger

It highly relies on the use of refrigeration and dehumidification equipment, which results in a large amount of conventional energy consumption. However, this contradicts the ...

To reduce energy consumption in temperature- and humidity-independent air-conditioning systems and enhance solar energy utilization, this study developed a solar ...

The system is capable of using as its source of power low-grade solar heat from low-cost flat plate collectors and has the potential to provide both cooling and dehumidification ...

This paper presented an analysis of desiccant cooling systems in terms of the feasibility of replacing an existing condensing coil dehumidification system in a school building ...

Abstract This study examines the performance of an integrated evaporatively-cooled window (ECW) with a desiccant dehumidification system (DDS) combined with a ...

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