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Lithium bromide absorption solar air conditioning



Overview

Can a solar cooling system combine parabolic trough technology with LiBr-water absorption chiller?

Analytical research on a solar cooling system that combines parabolic trough technology with a LiBr-water absorption chiller was brought by Tzivanidis and Bellos [14] to obtain a cooling load of 150 kWh.

Which aqueous solution is used in absorption cooling system?

Aqueous solutions of Calcium Chloride (CaCl₂), Lithium Chloride (LiCl), Lithium Bromide (LiBr), Sodium Hydroxide (NaOH), Potassium Hydroxide (KOH), and Ammonia are the absorption materials are commonly utilized in the absorption technology . However, LiBr-H₂O is commonly used as a working fluid in absorption cooling systems .

Which aqueous solution is most suitable for solar cooling applications?

The absorption technology is the most appropriate for solar cooling applications [10, 11]. Aqueous solutions of Calcium Chloride (CaCl₂), Lithium Chloride (LiCl), Lithium Bromide (LiBr), Sodium Hydroxide (NaOH), Potassium Hydroxide (KOH), and Ammonia are the absorption materials are commonly utilized in the absorption technology .

Does a LiBr/H₂O absorption system work in Asiatic tropical climate?

Lubis et al. [18] examined the behavior of a LiBr/H₂O absorption system with a capacity cooling of 239 kW. An analytical study was presented to characterize the viability of the system specifically in the Asiatic tropical climate. It was concluded that the system has considerable usability in such a climate.

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In this study, operational and performance characteristics of a solar driven lithium bromide-water absorption chiller integrated with absorption energy storage of the same ...

The main objective of this study is to assess the performance of solar Lithium-Bromide- H_2O absorption air conditioning system for a conference hall under hot climate conditions. The goal ...

Lithium-bromide/water system is more effective than any other pair of absorber-refrigerant. It is seen that the inlet temperature of generator is the most important parameter ...

In this study, a comprehensive thermodynamic analysis was performed to evaluate and optimize the performance of a solar-powered single-effect lithium bromide-water ...

In this regard, this study focuses on solar cooling technology as an alternative to conventional air conditioning systems, which consume a significant amount of electricity. A ...

The simulation shows that a flat plate solar collector to power our system can only be used effectively under specific solar irradiance conditions. Key words: Air conditioner / ...

Experimental evaluation of a direct air-cooled lithium bromide-water absorption prototype for solar air conditioning A. González-Gil, M. Izquierdo, J.D. Marcos, E. Palacios

Abstract. This article regard the solar lithium-bromide absorption refrigerating air conditioning system as the research object, and it was conducting adequate research of the working ...

The absorption technology is the most appropriate for solar cooling applications [10, 11]. Aqueous solutions of Calcium Chloride (CaCl₂), Lithium Chloride (LiCl), Lithium Bromide ...

The aim of this study is to design a lithium bromide-water (LiBr-H₂O) absorption cooling system with a rated capacity of about 1 kW of solar-powered cooling using lithium ...

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