

Web of Science



Search Search Results

Tools Searches and alerts Search History Marked List

Look Up Full Text

Full Text from Publisher

Export...

Add to Marked List

1 of 4

Development and performance of a heat driven R141b ejector air conditioner: Application in hot climate country

By: Thongtip, T (Thongtip, Tongchana)^[1]; Aphornratana, S (Aphornratana, Satha)^[2]**ENERGY**

Volume: 160 Pages: 556-572

DOI: 10.1016/j.energy.2018.07.043

Published: OCT 1 2018

Document Type: Article; Proceedings Paper

View Journal Impact

Abstract

This paper proposes the design, construction, and test of a prototype R141b ejector refrigeration system. It was used as an air conditioner for a hot climate country (Thailand). The prototype machine was designed to work as a water chiller to provide thermal comfort condition for the tested room with the cooling capacity up to 4500 W. It was driven by hot water with temperatures of 90-98 degrees C. The condenser was cooled by water, which was provided by a cooling tower, with temperatures of 28-32 degrees C. CFD simulation was also employed to design the ejector. The tested results indicated that the prototype R141b ejector refrigerator working as an air conditioner was satisfactory in operating conditions consistent with a hot climate (Thailand's environment). The temperature of the air conditioned space was around 23 to 25 degrees C with the cooling load of 4500 W. The coefficient of performance (COP) was between 0.42 and 0.47. (C) 2018 Elsevier Ltd. All rights reserved.

Keywords

Author Keywords: Jet refrigeration; Ejector refrigeration; Air conditioning; Ejector; HCFC-141b

KeyWords Plus: PRIMARY NOZZLE GEOMETRIES; REFRIGERATION SYSTEM; STEAM EJECTOR; CHILLER; DESIGN

Author Information

Reprint Address: Aphornratana, S (reprint author)

Thammasat Univ, Sirindhorn Int Inst Technol, POB 22,Thammasat Rangsit PO, Pathum Thani 12121, Thailand.

Addresses:

[1] King Mongkuts Univ Technol North Bangkok, Dept Teacher Training Mech Engr, Bangkok 10800, Thailand

[2] Thammasat Univ, Sirindhorn Int Inst Technol, POB 22,Thammasat Rangsit PO, Pathum Thani 12121, Thailand

E-mail Addresses: satha@siit.tu.ac.th

Funding

Funding Agency	Grant Number
Electricity Generating Authority of Thailand	58-B104000-151-IO.SS03A3008232-SIIT

View funding text

Publisher

PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND

Categories / Classification

Research Areas: Thermodynamics; Energy & Fuels

Web of Science Categories: Thermodynamics; Energy & Fuels

See more data fields

Citation Network

In Web of Science Core Collection

1

Times Cited

Create Citation Alert

All Times Cited Counts

1 in All Databases

See more counts

22

Cited References

View Related Records

Most recently cited by:

Besagni, Giorgio.
Ejectors on the cutting edge: The past, the present and the perspective.
ENERGY (2019)

View All

Use in Web of Science

Web of Science Usage Count

2

2

Last 180 Days

Since 2013

Learn more

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded
- Conference Proceedings Citation Index-Science

Suggest a correction

If you would like to improve the quality of the data in this record, please suggest a correction.

1 of 4

Cited References: 22

Showing 22 of 22

View All in Cited References page

(from Web of Science Core Collection)