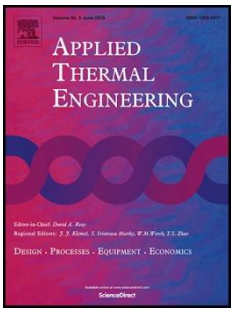
Accepted Manuscript



Title: Performance evaluation of flash tank-absorption cooling cycle using two ejectors

Author: Azher M. Abed, M.A. Alghoul, K. Sopian

PII: S1359-4311(16)30217-4
DOI: http://dx.doi.org/doi: 10.1016/j.applthermaleng.2016.02.074
Reference: ATE 7803

To appear in: *Applied Thermal Engineering*

Received date: 1-5-2015
Accepted date: 12-2-2016

Please cite this article as: Azher M. Abed, M.A. Alghoul, K. Sopian, Performance evaluation of flash tank-absorption cooling cycle using two ejectors, *Applied Thermal Engineering* (2016), http://dx.doi.org/doi: 10.1016/j.applthermaleng.2016.02.074.

PERFORMANCE EVALUATION OF FLASH TANK-ABSORPTION COOLING CYCLE USING TWO EJECTORS

Azher M. Abed[1, 2]*, M.A. Alghoul[1]*, K. Sopian[1]

[1]Solar Energy Research Institute (SERI), Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor Malaysia

[2]Department of Air conditioning and Refrigeration, Al-Mustaqbal University College, Babylon, Iraq

Corresponding Authors: azhermuhson@gmail.com (Azher M. Abed), dr.alghoul@gmail.com (M.A.Alghoul)

Highlights

Ejector-flash tank-single stage absorption cycle is still subject for further enhancement

Adding a new ejector to work under the intermediate pressure of the flash tank is investigated

Energy balance analyses of the cycle before and after modification has been carried out

COPs increment range of the modified cycle are 11.56 % to 14.05% at T_{gen} between 80-95^{o}C

Utilizing a part of streamlines of ejector 2 decreases heat power in generator, so increases COP

Abstract

Combining the ejector-flash tank with the single stage absorption cycle has shown potential improvement in the COP. However, the cycle is still subject for further enhancement. Addition of two ejectors in the cycle to work under low-pressure of evaporator and intermediate-pressure of flash tank could optimize the COP of the cycle. In this study, the effect of adding two ejectors has been investigated. Moreover, a new stream line between 2nd ejector and the rectifier has been created and evaluated. Energy balance analyses of the cycle before and after modification has