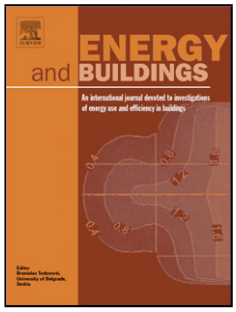
Accepted Manuscript



Title: Experimental investigation and Numerical validation of total heat exchanger and membrane phenomena

Author: S. Sabek F. Tiss R. Chouikh A. Guizani

PII: S0378-7788(16)30891-X
DOI: http://dx.doi.org/doi:10.1016/j.enbuild.2016.09.045
Reference: ENB 7034

To appear in: *ENB*

Received date: 26-12-2015
Revised date: 10-6-2016
Accepted date: 20-9-2016

Please cite this article as: S.Sabek, F.Tiss, R.Chouikh, A.Guizani, Experimental investigation and Numerical validation of total heat exchanger and membrane phenomena, Energy and Buildings http://dx.doi.org/10.1016/j.enbuild.2016.09.045

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Experimental investigation and Numerical validation of total heat exchanger and membrane phenomena

S. Sabek[1a], F. Tiss[a], R. Chouikh[b], A. Guizani[a]

(a) Thermal Process Laboratory Research and Technologies Centre of Energy, Borj-Cedria Science and Technologies Park, BP 95, 2050 Hammam-lif, Tunisia

(b) King Khalid University, Faculty of Science, Physics Department

P. O. Box 9004, Abha 61413, Saudi Arabia

[1] Corresponding author. Tel.: + 216 22 734 582; fax: + 216 79 325 825.

E-mail address: seifennasr.sabek@gmail.com (S. Sabek).

Highlights

- Total heat exchanger is experimentally investigated, and numerically validated.
- The impacts of significant parameters on the internal air proprieties are presented.
- Air flow velocity and membrane surface inside the prototype building are measured.
- Activation and clogging phenomena of porous membrane are established.

Abstract

The total heat exchanger is a promising technology used to recover both latent and sensible heat. An experimental setup was built in order to evaluate parametric effects on the total heat exchanger efficiency. Numerically, the physical problem involves a two dimensional model including the momentum, heat and mass transport equations in climate chamber submitted to a fresh air stream.

Download English Version:

https://daneshyari.com/en/article/4919500

Download Persian Version:

https://daneshyari.com/article/4919500

Daneshyari.com