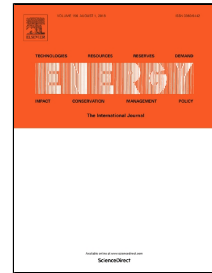


# Accepted Manuscript

Experimental investigation of an integrated collector–storage solar air heater based on the lap joint-type flat micro-heat pipe arrays

Zeyu Wang, Yanhua Diao, Yaohua Zhao, Tengyue Wang, Lin Liang, Yuying Chi



PII: S0360-5442(18)31349-5  
DOI: 10.1016/j.energy.2018.07.052  
Reference: EGY 13317  
To appear in: *Energy*  
Received Date: 14 February 2018  
Accepted Date: 10 July 2018

Please cite this article as: Zeyu Wang, Yanhua Diao, Yaohua Zhao, Tengyue Wang, Lin Liang, Yuying Chi, Experimental investigation of an integrated collector–storage solar air heater based on the lap joint-type flat micro-heat pipe arrays, *Energy* (2018), doi: 10.1016/j.energy.2018.07.052

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.

1 Experimental investigation of an integrated collector–storage solar air  
2 heater based on the lap joint-type flat micro-heat pipe arrays

3 Zeyu Wang<sup>[1]</sup>, Yanhua Diao\*<sup>[1-2]</sup>, Yaohua Zhao<sup>[1-2]</sup>, Tengyue Wang<sup>[1]</sup>, Lin Liang<sup>[1]</sup>,  
4 Yuying Chi<sup>[2]</sup>

5 *[1] Beijing Key Laboratory of Green Built Environment and Efficient Technology,*  
6 *Beijing University of Technology, Beijing 100124, China*

7 *[2] Beijing Advanced Innovation Center for Future Internet Technology, No. 100*  
8 *Pingleyuan, Chaoyang District, Beijing 100124, China.*

9

10 **Abstract**

11 This article presents an integrated collector–storage solar air heater  
12 (ICSSAH) based on lap joint-type (LJT) flat micro-heat pipe arrays  
13 (FMHPA) and latent thermal storage (LTS). FMHPA for thermal  
14 collection and for thermal storage/release were separated and overlapped.  
15 The discharging process is not affected by the length of the collection  
16 segment. Approximately 21.03 kg of 52# industry paraffin wax was  
17 utilized as thermal storage material (TSM) to store solar energy, and the  
18 collection area was set to 1.03 m<sup>2</sup>. The influence of environmental factors  
19 on the charging process and the effects of heat transfer fluid's parameters  
20 on the discharging process were studied. An average efficiency curve was

---

\* Corresponding author. Tel.: +86 010 67391608-802; fax: +86 010 67391608-802  
E-mail address: [diaoyanhua@bjut.edu.cn](mailto:diaoyanhua@bjut.edu.cn) (Y.H. Diao)

Download English Version:

<https://daneshyari.com/en/article/8070998>

Download Persian Version:

<https://daneshyari.com/article/8070998>

[Daneshyari.com](https://daneshyari.com)