

Accepted Manuscript

Research Paper

The Development and Experimental Performance Evaluation on a Novel Household Variable Refrigerant Flow Based Temperature Humidity Independently controlled Radiant Air Conditioning System

Li Zhao, Chen Jianbo, Yu Haizhao, Cui Lingchuang

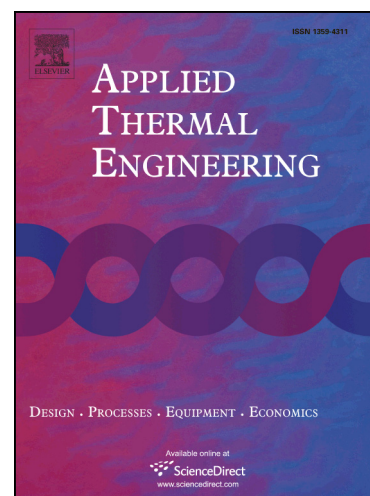
PII: S1359-4311(17)30355-1
DOI: <http://dx.doi.org/10.1016/j.applthermaleng.2017.04.056>
Reference: ATE 10205

To appear in: *Applied Thermal Engineering*

Received Date: 18 January 2017
Revised Date: 14 April 2017
Accepted Date: 15 April 2017

Please cite this article as: L. Zhao, C. Jianbo, Y. Haizhao, C. Lingchuang, The Development and Experimental Performance Evaluation on a Novel Household Variable Refrigerant Flow Based Temperature Humidity Independently controlled Radiant Air Conditioning System, *Applied Thermal Engineering* (2017), doi: <http://dx.doi.org/10.1016/j.applthermaleng.2017.04.056>

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.



The Development and Experimental Performance Evaluation on a Novel Household Variable Refrigerant Flow Based Temperature Humidity Independently controlled Radiant Air Conditioning System

Li Zhao^{1,*}, Chen Jianbo¹, Yu Haizhao², Cui Lingchuang¹

¹Schoole of Environment and Architecture

University of Shanghai for Science and Technology, Shanghai, China

² Shanghai Public Utility School, Shanghai, China

Abstract

The present temperature humidity independent control (THIC) air conditioning (A/C) systems are not that applicable in small-to-medium scaled residential and office buildings for their complex configuration and additional requirement of regenerating heat. In this paper, a novel house-hold VRF based radiant A/C system adopting outdoor air dehumidifier (OAD) was developed and experimentally tested. This novel system employed the VRF system, applying one refrigerant cycle to the OAD to cooling and dehumidifying the outdoor air and another to the Refrigerant-Water plate heat exchanger (RWPHE) to providing chilled water for the adopted radiant terminals. Therefore, the supplying outdoor air from the OAD handled the indoor latent cooling load and the radiant terminals the indoor sensible load, so as to realize the independent control of indoor air

Download English Version:

<https://daneshyari.com/en/article/4990919>

Download Persian Version:

<https://daneshyari.com/article/4990919>

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