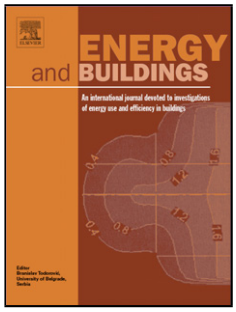

Title: Thermodynamic analysis of a novel heat pump water heater with two-stage heating for a great rise of water temperature

Author: Jianhua Wu Jie Lin

PII: S0378-7788(15)00049-3
DOI: http://dx.doi.org/doi:10.1016/j.enbuild.2015.01.042
Reference: ENB 5647

To appear in: *ENB*

Received date: 29-9-2014
Revised date: 8-12-2014
Accepted date: 20-1-2015

Please cite this article as: J. Wu, J. Lin, Thermodynamic analysis of a novel heat pump water heater with two-stage heating for a great rise of water temperature, *Energy and Buildings* (2015), http://dx.doi.org/10.1016/j.enbuild.2015.01.042

Thermodynamic analysis of a novel heat pump water heater with two-stage heating for a great rise of water temperature

Jianhua Wu*, Jie Lin

School of Energy and Power Engineering, Xi'an Jiaotong University, Xi'an 710049, PR China

*Corresponding author. Tel.: +82 029 8266 3786, +82 13689206050.

E-mail address: jhwuxjtu@hotmail.com (Jianhua Wu), jhwu@mail.xjtu.edu.cn.

Postal address: No. 28, Xian-ning West Rd., Xi'an City 710049, Shaanxi, PR China.

Highlights

1. Introduction of a novel two stage compression cycle and its compressor
2. Thermodynamic analysis of the novel two stage cycle
3. Optimization of condensing temperature of first stage for COP and heating capacity in the novel two stage cycle
4. Investigation of the effect of relative liquid injection mass and evaporating temperature on performance
5. Higher COP than conventional two stage compression cycle for a great rise of water temperature