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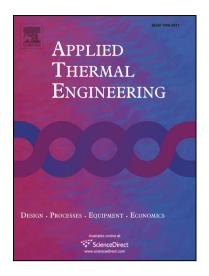
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Experimental study for a high efficiency cascade heat pump water heater system using a new near-zeotropic refrigerant mixture

Xuelian Ma^a, Yufeng Zhang^a, Xiaoqiong Li^a, Hongfu Zou^c, Na Deng^{a,*}, Jinzhe Nie^b, Xiaohui Yu^a, Shengming Dong^a, Wei Li^a

^a School of Environmental Science and Engineering, MOE Key Laboratory of Efficient Utilization of Low and Medium Grade

Energy , Tianjin University, Tianjin, 300072, PR China

^bBeijing Key Lab of Heating, Gas Supply, Ventilating and Air Conditioning Engineering, Beijing University of Civil Engineering

and Architecture, Beijing 100044, P.R. China

^c Danfoss (Tianjin) Co.,Ltd ,Tianjin,300400,PR China

ABSTRACT

Single-stage water-source heat pumps have some disadvantages such as high pressure ratio and lower coefficient of performance at high water outlet temperature, and normally the temperature promotion cannot exceed 50°CTo surmount these disadvantages, a high temperature water-source cascade heat pump (HTWSCHP) was suggested; the HTWSCHP system demonstrates a much more competitive performance at high water outlet temperature of 142°C and the temperature promotion can reach 90°CLots of researches have been performed to analyze the cascade heat pump system, but they are normally about the low ambient temperature and there is very little information about the high water-outlet temperature. In this study, a HTWSCHP system was investigated experimentally. The high and low refrigerant cycle employed BY-3(A&B) and R245fa respectively. The experimental test

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