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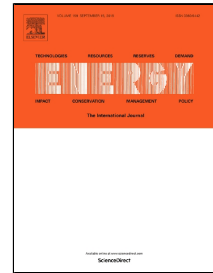
Configuration Optimization of an Enhanced Ejector Heat Exchanger Based on an Ejector Refrigerator and a Plate Heat Exchanger

Fangtian Sun, Xu Chen, Lin Fu, Shigang Zhang

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1 **Configuration Optimization of an Enhanced Ejector Heat Exchanger**
2 **Based on an Ejector Refrigerator and a Plate Heat Exchanger**

3 Fangtian Sun^{a,b*}, Xu Chen^a, Lin Fu^b, Shigang Zhang^b

4 ^a Beijing University of Civil Engineering and Architecture, Beijing 100044, China

5 ^b Tsinghua University, Beijing 100084, China

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7 **ABSTRACT:**

8 Ejector heat exchanger has good performance in heat transfer, but its regulating
9 characteristics are poor, and to improve its regulating characteristics, an enhanced
10 ejector heat exchanger (EHE) with a pressure booster is presented. According to the
11 difference in location of the pressure booster, the enhanced ejector heat exchangers
12 are divided into two types. One is EHE-MF with its pressure booster located in the
13 pipeline between outlet of ejector and refrigerant inlet of the condenser. The other is
14 EHE-SF with its pressure booster located in the pipeline between secondary fluid inlet
15 of ejector and refrigerant outlet of the evaporator. The two enhanced ejector heat
16 exchangers have been analyzed from the perspective of thermodynamics. The results
17 show that the location of pressure booster in the pipeline between outlet of ejector and
18 refrigerant inlet of the condenser contributes to decreasing boosted pressure and
19 power and increasing product exergy efficiency. The EHE-MF has higher
20 thermodynamic performance, and its system configuration is optimal from the
21 perspective of thermodynamics.

22 **Keywords:** System configuration; Regulating characteristics; thermodynamic
23 performance; Industrial waste heat; District heating; Enhanced ejector heat exchanger

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