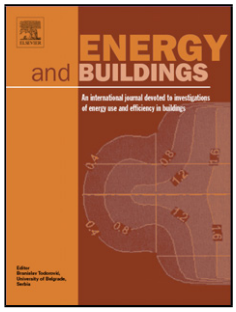

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Experimental study on the heat recovery characteristic of a heat exchanger based on a flat micro-heat pipe array for the ventilation of residential buildings

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Highlights

(1) A small heat pipe heat recovery device using micro-heat pipe array which has many advantages, including lightness, compactness, efficiency.

(2) The influences of different parameters on the heat and flow characteristics of the heat pipe heat recovery device were experimentally studied.

(3) The experimental results show that the maximum heat recovery efficiency and COP could reach 78% and 91.9 respectively.

Abstract: Heat recovery significantly and positively affects energy conservation and prevents global warming. A small flat heat pipe heat recovery device (SFHPHRD), which applies flat micro-heat pipe array (FMHPA) with welded, serrated and staggered fin on its surface, is designed as a core heat transfer component in the heat recovery systems of residential buildings. The air volume flow ratio between fresh air and exhaust air was maintained at a value of 1 in the experiment. Under simulated winter and summer conditions, the performance of SFHPHRD under varying indoor and

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