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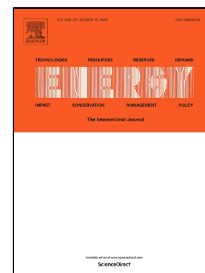
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# Performance analysis of a novel thermoelectric assisted indirect evaporative cooling system

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## Abstract

In this paper, a novel thermoelectric assisted indirect evaporative cooling system is proposed. Specifically, thermoelectric cooling (TEC) modules are sandwiched between channels of a flat plate cross flow indirect evaporative cooler. A mathematical model of the novel system is developed, and influences of main operating and geometrical parameters on the system's performance are analyzed in detail. Analytical results show that with the assistance of the thermoelectric cooling, the proposed system is able to cool primary air to a temperature much lower than inlet air wet bulb temperature, even dew-point temperature, meanwhile keep a relatively high coefficient of performance (COP), by selecting appropriate number

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