Theoretical determination of effectiveness for heat pipe heat exchangers operating in naturally ventilated tropical buildings

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Abstract

The thermal performance of wickless thermosyphon based heat pipe heat exchangers (HPHEs) for naturally ventilated buildings was simulated using a computer simulation program. This computer program utilizing Microsoft Visual Basic 6.0 software was developed on the basis of the effectiveness—number of heat transfer units (NTU) method and uses the concept of iteration to predict the temperature distribution across the HPHE and its thermal performance. The overall effectiveness of HPHEs was also studied in this research.
Keywords

heat pipe heat exchanger, coolness recovery, effectiveness, numerical simulation