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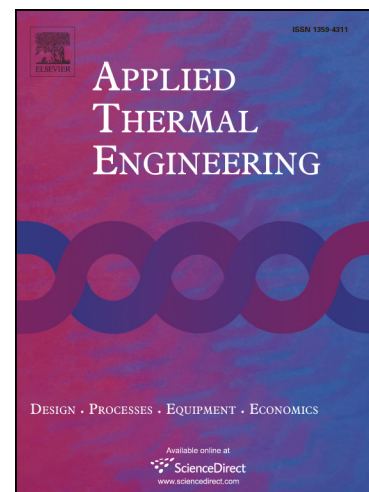
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# Novel dual-loop bi-evaporator vapor compression refrigeration cycles for freezing and air-conditioning applications

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## Abstract

Cooling production at different temperature levels for various applications has been highlighted in recent years since the produced cooling capacity must be used for different applications to meet all subjects' demands. For this purpose, a novel dual-loop bi-evaporator vapor compression refrigeration cycle is proposed to meet these demands for freezing and air-conditioning applications which can be employed in building sectors. Later, ejector expander is used in place of the expansion valve in the proposed refrigeration system to enhance the performance of this basic system based on the thermodynamics and thermoeconomics viewpoints. Four working fluids of R717, R290, R600a, and R134a are examined where R717 is recommended from thermodynamics, thermoeconomics, and environment viewpoints. The results indicated that using ejector expander in place of the

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