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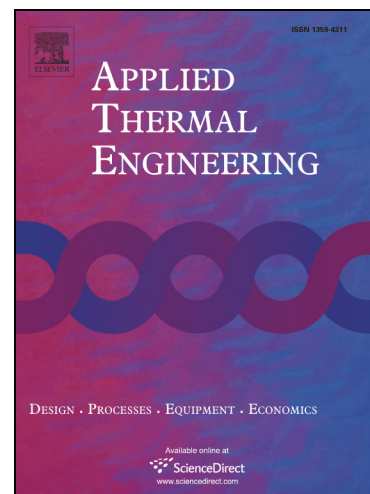
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Comparison of Single and Double Stage Absorption and Resorption Heat Transformers Operating with the Ammonia-Lithium Nitrate Mixture

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Abstract.

This paper presents the modeling and thermodynamic analysis of different heat transformers configurations using the alternative mixture $\text{NH}_3\text{-LiNO}_3$. The analyzed configurations are: i) Absorption Heat Transformer (AHT), ii) Double Absorption Heat Transformer (DAHT), iii) Resorption Heat Transformer (RHT) and iv) Double Resorption Heat Transformer (DRHT). Coefficients of performance and exergetic efficiencies are reported for each one of the systems as function of the main system temperatures. The results showed that the coefficients of performance and exergetic efficiencies are higher for the conventional cycles without the resorption circuit (AHT and DAHT), however, their operating pressures are considerable higher than those reached with the systems with the resorption circuit.

Key Words: Heat Transformer; Resorption; Ammonia-Lithium Nitrate; Performance; Modeling.

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