

Abstract

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Parametric thermodynamic analysis for single and double effect absorption systems

Absorption refrigeration system presents a promising alternative for vapor compression system due to the increase of the environmental problems and electricity cost. In recent years, research has been increased to improve the performance of the absorption systems. A parametric thermodynamic analysis is developed for both single and double effect absorption systems in order to study the effect of different operational parameters on system performance as represented by the COP in order to determine which component has the greater effect on the performance of the system. The results showed that the maximum COP is achieved at higher evaporator and generator temperatures and lower absorber and condenser temperatures. The results also showed that the absorber is the most effective component in the systems as it has a significant effect on the performance of the system for both single and double effect systems and should be regarded as a system component that needs improvement.