

Abstract

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A Full Thermodynamic Investigation for Vapor Absorption Cooling Systems: Part [2]: Exergy Analysis

The prices of energy have been increasing exponentially worldwide and industrial refrigeration is one of the most energy consuming sector. Absorption refrigeration systems are an alternative to vapor compression systems due to the increase of the environmental problems and electricity cost. Research has been increased to improve the performance of the absorption systems and the main way of improving efficiency is through thermodynamic analysis and optimization. Exergy analysis of single and double effect systems is presented. The effect of different component temperature on the COP and exergetic efficiency is calculated. The results showed that the maximum COP and exergetic efficiency is achieved at lower values of the generator& the absorber temperature for both systems. The absorber temperature has the highest effect on the exergetic efficiency for both systems which shows that the absorber is the component that needs the improvement in design.