

Performance Analysis of Absorption Power Cycle under Different Source Temperatures

Authors : Kyoung Hoon Kim

Abstract : The absorption power generation cycle based on the ammonia-water mixture has attracted much attention for efficient recovery of low-grade energy sources. In this paper, a thermodynamic performance analysis is carried out for a Kalina cycle using ammonia-water mixture as a working fluid for efficient conversion of low-temperature heat source in the form of sensible energy. The effects of the source temperature on the system performance are extensively investigated by using the thermodynamic models. The results show that the source temperature as well as the ammonia mass fraction affects greatly on the thermodynamic performance of the cycle.

Keywords : ammonia-water mixture, Kalina cycle, low-grade heat source, source temperature

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