

# **Abstract**

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## **A Full Thermodynamic Investigation for Vapor Absorption Cooling Systems: Part [1]: Energy Analysis**

In recent years, research has been increased to improve the performance of vapor absorption systems due to the increase of the environmental problems and electricity cost. This paper presents the simulation results and an overview of the performance of single and parallel flow double effect vapor absorption air conditioning systems which is suitable for residential and small building applications. The energy analysis is carried out for each component of the system in order study the effect of different operational parameters on system performance. The results showed that the parallel flow-double effect system has a higher COP compared with the single effect system. The results also showed that the absorber is the most effective component for both systems as it has a significant effect on the performance of the system for both systems.