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# Comparative Exergy Analysis of Ammonia-Water Rankine Cycles and Kalina Cycle

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**Abstract :** This paper presents a comparative exergy analysis of ammonia-water Rankine cycles with and without regeneration and Kalina cycle for recovery of low-temperature heat source. Special attention is paid to the effect of system parameters such as ammonia mass fraction and turbine inlet pressure on the exergetical performance of the systems. Results show that maximum exergy efficiency can be obtained in the regenerative Rankine cycle for high turbine inlet pressures. However, Kalina cycle shows better exergy efficiency for low turbine inlet pressures, and the optimum ammonia mass fractions of Kalina cycle are lower than Rankine cycles.

**Keywords :** ammonia-water, Rankine cycle, Kalina cycle, exergy, exergy destruction, low-temperature heat source
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