

عنوان مقاله:

Comparative exergoeconomic and exergoenvironmental analysis of an ejector enhanced flash-binary geothermal system using various organic working fluids

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خلاصه مقاله:

This article proposes and analyses a new modified flash-binary geothermal power system with ejector enhanced dual-pressure evaporation organic Rankine cycle using six organic working fluids including R600a, R600, R601a, R601, R1234ze(E), and R245fa. Exergoeconomic and exergoenvironmental concepts are used to analyse the system. The major design parameters are considered to assess the cost and environmental impact performances of the system. Parametric assessment indicates that turbine back pressure (P_3) has the highest positive effect on the csystem among the other parameters for all fluids especially for R245fa within 91.23%. Furthermore, the highest positive effect on the bsystem belongs to high-pressure turbine inlet pressure (P_{19}) for R601a within 24.28%. On the other hand, Pump2 outlet pressure (P_{13}) has the negative effect on the bsystem and csystem for all fluids.

کلمات کلیدی:

Geothermal energy, exergoeconomic, exergoenvironmental, ejector

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