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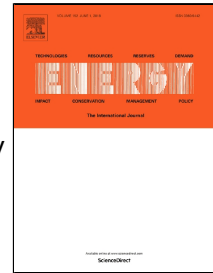
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# Thermodynamic analysis of a novel combined cooling and power system driven by low-grade heat sources

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1 **ABSTRACT:** A novel combined cooling and power system which combines a conventional  
2 ammonia-water power/cooling cycle named Goswami cycle and an ejector refrigeration cycle is  
3 proposed and investigated. This new combined system can improve the refrigerating capacity of the  
4 conventional power/cooling system, and it can also adjust the cooling capacity to power ratio by  
5 changing the proportion of the ammonia-water flow into the turbine and the ejector. A mathematical  
6 model is developed to study the system performance. It is shown that under the given conditions the  
7 combined thermal efficiency and the combined exergy efficiency are 17.49% and 26.15%,  
8 respectively. The exergy analysis shows that the exergy destruction mainly occurs in the recovery  
9 heat exchanger, followed by boiler and rectifier, respectively. Parametric study shows that the  
10 absorber temperature, the cycle highest pressure and low pressure, the boiler temperature and the split

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