عنوان مقاله:

Performance assessment of a hybrid fuel cell and micro gas turbine power system

محل انتشار:

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خلاصه مقاله:

In this paper, a hybrid solid oxide fuel cell (SOFC) and micro gas turbine (MGT)power system is parametrically studied to evaluate the effect of different operatingconditions. The SOFC/MGT power system includes SOFC reactor, combustion chamber, compressor and turbine units, and two heat exchangers. The effects offuel utilization, temperature, and pressure are assessed on performance of the hybrid SOFC/MGT power system using energy and exergy analyses. This study reveals that the main exergy loss occurs in the external reformer and the maximum achievable output power is about 7kW for the hybrid system. Finally, the promising first law thermal efficiency of up to 83% is achieved when the secondlaw efficiency enhances to 65% for the hybrid system

کلمات کلیدی:

Energy & Exergy, Micro Gas Turbine, Solid Oxide Fuel Cell, Thermal Efficiency