Short Communication

Performance Analysis of Direct Carbon Fuel Cell-Braysson Heat Engine Coupling System

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doi: 10.20964/2020.06.32

Received: 5 February 2020 / Accepted: 26 March 2020 / Published: 10 May 2020

In this paper, a new coupling system with irreversible Braysson based direct carbon fuel cell is constructed. The new irreversible coupling system can utilize the high quality waste heat generated in the working process of direct carbon fuel cell to drive the irreversible Braysson heat engine, so as to improve the overall working performance. The analytical expressions of direct carbon fuel cell, irreversible Braysson heat engine and coupling system are given respectively, and the performance of the newly constructed coupling system is obviously better than that of the single direct carbon fuel cell.

Keywords: irreversible Braysson heat engine; Direct carbon fuel cell coupling system; Performance analysis

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