
By regulating the CO2 flow rate, higher concentrations of hydrogen can be generated, making it a promising energy source for fuel cells. The device offers a unique ...

Developing a high-performance energy management strategy that simultaneously addresses system economy, fuel cell durability, and battery lifespan remains a critical challenge. This ...

FCEV, fuel cell hybrid, is defined as a type of vehicle that combines a fuel cell system with an energy storage unit, such as a lithium-ion battery, utilizing plug-in hybrid technology to ...

In a fuel-cell-based direct-hybrid system, a fuel cell and a battery are connected in parallel without a DC/DC converter. The voltage levels in the system are therefore directly ...

One existing approach for the realization of an all-electric aircraft is a direct hybrid system comprising a fuel cell and a battery. During high-power phases of a mission, such as takeoff ...

Hybrid Electric Vehicles (HEVs), Fuel Cell Hybrid Electric Vehicles (FCHEVs) and Battery Electric Vehicles (BEVs) are key solutions for sustainable transportation, requiring ...

This paper presents the comprehensive design, simulation, and experimental validation of a grid-tied hybrid renewable energy system tailored for electric vehicle (EV) ...

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In this work we provide a proposed parallel configuration structure for direct methanol fuel cell (DMFC)/Li-ion battery hybrid system that maximizes the dependance on DMFC and reduces ...

Powertrains based on fuel cells and batteries, can reduce the climate impact of aviation. Combining both technologies in a direct hybrid system, without using a DC/DC ...

In this work it is demonstrated how the fuel cell system and the battery in a direct-hybrid system can be designed and optimized for a known mission power profile, taking into account the ...

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