

Simulation of a 100 kW Diesel Fuel Processor/Molten Carbonate Fuel Cell System

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Fuel cells convert hydrogen into electrical energy with high efficiency and low pollutants. Among many types of fuel cells, the MCFC (Molten Carbonate Fuel Cells) is considered in this work. Diesel will use as feed, but it contains sulfur component like Dibenzothiophene (DBT) that can poison the catalyst. For reduce sulfur component, desulphurization is needed. After desulphurization, diesel will through several process, such as steam reforming, water gas shift and goes to purifying unit, then hydrogen formed from that process will go to MCFC unit to convert into 100 kW of electrical energy. All processes raging from diesel convert to hydrogen, and hydrogen enter the MCFC unit to convert into electrical energy will be simulated using Aspen Hysys 8.4.