

PROPANE FUEL PROCESSING FOR SOFC SYSTEMS

tested with solid oxide
fuel cells.

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ABSTRACT

Fuel processing is one of the key development areas in the commercialization of solid oxide fuel cell systems. The fuel processor converts commercially available fuels into a hydrogen and carbon monoxide rich gas, which is used by the fuel cell in order to generate power. This paper focuses specifically on propane fuel processing, as the processor is a fundamental component in the propane fueled fuel cell system.

A strategic logical approach was used to develop the propane fuel processor. Knowledge that was gained in developing natural gas fuelled fuel cell systems was transferred to assist in developing propane fuelled fuel cell systems. Modeling was used to assist in the design process that aided in choosing the final design. Two catalyst solutions were recommended for the final design – one for fuel reforming and one for fuel desulphurization. Lastly, the processor was