

The Preparation and Characterization of Cu/Co Modified Anode Catalysts

김광호, 김준호, 성대진, 문상진, 홍석인*

고려대학교

(sihong@korea.ac.kr*)

Most fuel cells require hydrogen as the fuel, but viable near-term applications will need to use the more readily available hydrocarbons, e.g., methane. Nowadays the demonstration of power plants and planned fuel-cell electric vehicles therefore includes a reformer that converts hydrocarbon fuel into hydrogen. Operating fuel cells directly on hydrocarbons would obviously eliminate the need for such a high reformer and improve efficiency. Solid oxide fuel cells—promising candidates for stationary power generation—can also use hydrocarbon fuel directly to generate energy; however, this mode of operation resulted in either carbon deposition at high temperatures or poor power output at low operating temperatures.

When the SOFC reactor was operated at intermediate temperature, i.e. 800 °C, the power generation performances of the SOFC reactor with YSZ thin film electrolytes increased 20SDC- > 20GDC- > 20YDC-anode.