Water Gas Shift Reaction over Modified Ceria based Catalysts for Fuel Processor and Hydrogen Station

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Water gas shift (WGS) reaction over the ceria based and alumina based catalysts was carried out to develop an alternative to commercial LTS ($Cu/Zn/Al_2O_3$) catalyst. The catalysts were prepared by an impregnation method and were characterized by N_2 physisorption, CO chemisorption, TPR, XRD and TEM. It was found that the ceria based catalysts showed more active than the alumina based catalysts for WGS reaction. It was found that Cui/CeO_2 catalyst showed higher activity than the $Cu-Zn/Al_2O_3$ at temperature of above 260℃, and CO conversion of more than 70% was observed at 280~300℃.