

A novel approach on the Steam Reforming of Propane: The effect of Ceria in Ni Based Catalyst Supported on Zeolite Y

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In this study, we have investigated the effect of Ceria as a promoter for nickel based catalyst supported on zeolite Y in the steam reforming of propane. The catalysts were synthesized by the impregnation method containing 10 wt% Ni and 5% Ceria content. All catalysts were characterized by XRD, H₂-TPR, FTIR, and N₂-physisorption techniques. The catalytic performance for steam reforming of propane was carried out on a fixed bed reactor at T = 600 – 800 °C, 1 bar and GHSV of 35,000 h⁻¹. It was found that CeN/Y catalyst showed exemplary performance in steam condition compared to Zeolite Y. It is believed that the catalyst performance of Ni based catalyst supported on zeolite Y can be further improved by the modification of support preparation method.