Studies on the Reforming of N-Hexadecane over Ca-Modified Ni-based Hydrotalcite Catalyst

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Recently, hydrogen production by steam reforming of liquid hydrocarbons has been received much attentions for application in fuel processor system. In this work, steam reforming of n-hexadecane (n-C16H34) was investigated over Ca modified Ni-based hydrotalcite-like catalysts. Steam reforming was carried out in a temperature range of 750 ~ 950 ℃, at atmospheric pressure with a space velocity of 10,000 h-1 H2O/C molar ratio of 3.0 in a fixed bed reator system. The prepared catalysts were analyzed by N2 Physisorption, CO Chemisorption, TPR, XRD, SEM and TEM techniques. These results showed that Ca metal modified Ni/MgAl catalyst described higher catalytic activity under the tested conditions even though filamentous carbon was formated during the steam reforming of n-hexadecane.