

## Study on Catalytic Activity over Ni/Mg/Al<sub>2</sub>O<sub>3</sub> Hydrotalcite Derived Catalysts for Hydrogen Production

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Ni/Mg/Al<sub>2</sub>O<sub>3</sub> catalysts derived from a hydrotalcite precursor were studied for steam reforming of LPG with temperature range of 600 ~ 850°C, feed molar ratio of H<sub>2</sub>O/C = 1.0 ~ 3.0, a space velocity of 10,000 ~ 30,000 h<sup>-1</sup> and atmospheric pressure. Ni/Mg/Al<sub>2</sub>O<sub>3</sub> catalyst was prepared by co-precipitation method and Ni/MgO and Ni/Al<sub>2</sub>O<sub>3</sub> catalysts were produced by an incipient wetness method. The Ni/Mg/Al<sub>2</sub>O<sub>3</sub> catalysts showed higher conversion and H<sub>2</sub> selectivity under the tested conditions and the catalytic activity increased with increasing reaction temperature. The characteristics of the fresh and used catalysts was analyzed by N<sub>2</sub> Physisorption, CO Chemisorption, XRD, SEM and TEM.