

## Comparison of Calcination Atmosphere of La and Ni complex Precursor: Its Application on Dry Reforming of Methane

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Dry reforming of methane is a promising way to produce synthesis gas which can be a feedstock for light olefin and higher alcohol synthesis. Ni/La<sub>2</sub>O<sub>3</sub> catalysts were prepared by EDTA-cellulose method with different calcination atmosphere (N<sub>2</sub> or Air). The prepared catalysts were characterized by various techniques such as N<sub>2</sub> physisorption, TPR, XRD, TEM-EDS and TG analysis. It was found that LaNiO<sub>3</sub> type perovskite was produced in Air calcination, however Ni/La<sub>2</sub>O<sub>3</sub> was produced in N<sub>2</sub> calcination. It was found that Ni was well dispersed on La<sub>2</sub>O<sub>3</sub> surface and showed smaller nickel particle sizes. Therefore, it showed higher catalytic performance and less sintering of active metal in the dry reforming of methane at the reaction conditions of 700 °C, 1 bar and molar ratio of CH<sub>4</sub>:CO<sub>2</sub> = 1 : 1.