

**Nickel supported monolith catalyst for steam reforming of CO<sub>2</sub>: effect of promoter (Ca, Sr, La)**

\_\_\_\_\_,<sup>1</sup>,<sup>1,2</sup>,<sup>1,3</sup>, Dr. Ramesh S.<sup>1</sup>,<sup>1,\*</sup>  
<sup>1</sup>KIST; <sup>2</sup>UST; <sup>3</sup>Green school, Korea university  
(djmoon@kist.re.kr\*)

Nickel supported monolith catalyst with different promoters (Ca, Sr, La) were prepared and well characterized by XRD, TPR, TGA and N<sub>2</sub>-physorption. XRD results illustrated that all the catalysts showed well developed spinel (NiAl<sub>2</sub>O<sub>4</sub>) phase. TPR results were observed that spinel is difficult to reduction at lower temperature. The catalytic activities for CO<sub>2</sub> reforming were studied under fixed bed reaction conditions. It was observed that bimetallic promoter has enhanced effect on conversion and selectivity compared to monometallic promoter. Under the reaction condition studied CaLaNi/Al<sub>2</sub>O<sub>3</sub> showed the superior performance and stability compared to other catalysts