Ni-Co based Catalysts on Calcium Aluminate for Combined Steam CO_2 Reforming of methane: CO_2 activity and mechanistic insights

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Nickel (Ni) is a well-known active metal for reforming reaction. However, the coke formation and sintering are still considered as the major issues for the commercial applications of these catalysts so extensive researches have been undergoing to upgrade the catalysts. Bimetallic catalysts, with distinct electronic and chemical properties can enhance the catalytic performances and coke resistance.

In our research, the granule type Nickel-Cobalt based supported catalysts were prepared by extruder and marumerzier and evaluated under in Combined Steam CO_2 Reforming of Methane (CSCRM) reaction. Optimum Ni/Co ratio was screened to maximize the CO_2 conversion in CSCRM reaction. The optimum Ni-Co alloy was increases CO_2 activity and changes reaction pathway than monometallic Ni catalyst