

عنوان مقاله:

Catalytic Performance of Ni-Co/Al₂O₃-MgO-ZrO₂ Nanocatalyst at Different MgO Contents Using Zirconyl Nitrate Solution Precursor for CO₂ Reforming of Methane

محل انتشار:

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خلاصه مقاله:

The industrial application of dry reforming of methane is limited by coke formation and efficient catalyst design. To this aim, Ni-Co/Al₂O₃-MgO-ZrO₂ nanocatalysts with different loadings of MgO were prepared by sol-gel method and tested for CO₂ reforming of methane. The prepared nanocatalysts were characterized by XRD and FESEM analysis. According to the FESEM images, increasing the MgO content leads to uniform, tuneable and smaller particle size. XRD patterns show that by increasing the amount of MgO, crystallite size decreases. The catalytic results showed that the synthesized nanocatalysts exhibit high catalytic activity as well as long stability. However, the one with high amount of MgO exhibited better catalytic performance at all test temperatures. This feature was suggested to be closely associated with both the amount of MgO and preparation method (sol-gel).

کلمات کلیدی:

Dry reforming, Synthesis gas, Ni-Co/Al₂O₃-MgO-ZrO₂, Nanocatalyst, Sol-Gel

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