

Effect of Metal Promotion on Methanol Synthesis Catalysts for Hydrogenation of CO and CO₂
Mixtures

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Recently, environmental issues related to climate change and air pollution have created a great deal of interest in the production of clean fuels. In this regard, the methanol synthesis process is regarded one of the most promising technology for producing clean fuels from stranded natural gas. In this study, the metal promoted methanol synthesis catalysts was prepared by the co-precipitation and the deposit precipitation methods. The prepared catalyst was characterized by N₂ adsorption, XRD, H₂-TPR, TGA, N₂O adsorption technology. The effect of promotion is investigated on the performance of methanol synthesis catalysts. The methanol synthesis reaction was performed in a fixed bed reactor at 40 bar conditions with different H₂/CO/CO₂ ratio in the feed mixtures.