

Study of methanol production using synthesis gas

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Methanol production using synthesis gas was investigated over a series of Cu/ZnO catalysts prepared by various pH conditions. These catalysts were confirmed by XRD, BET, N₂O chemisorption and TPR measurement before and after the reaction. It was revealed that pH conditions on catalysts preparation played an important role in active metal formation on the catalyst surface and catalytic performance in the hydrogenation of carbon dioxide. Zr added to Cu/ZnO catalysts favorably served in enhancing copper dispersion on the catalyst surface and improving carbon dioxide conversion. Among the catalysts tested, Cu/ZnO/ZrO₂/Al₂O₃ catalyst exhibited the highest reaction performance.