

Effect of the preparation method on Cu-ZnO-MO_x (M=Ce, Zr, Al) catalysts for methanol synthesis from CO₂-containing syngas

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In spite of the regulation of CO₂ emissions, CO₂ is still on the increase. To cope with this situation, CO₂ is utilized to methanol synthesis from syngas, CO and H₂, in this research. Due to stability of CO₂, catalytic reaction system should be needed to convert easily. Thus, it is necessary to develop the effective catalysts producing high-yield methanol at the reaction condition containing CO₂.

Cu-ZnO-Mo_x (M= Ti, Al, Ce) catalysts were prepared by co-precipitation method using oxalic acid and sodium carbonate as a precipitant. The catalysts were characterized by XRD, TPR, BET. Catalytic activity tests were carried out at 30 bar, 240°C. Composition of feed gas was H₂/CO/CO₂/He = 67/18/10/5.