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Investigation on Fischer-Tropsch Synthesis over Cobalt-Gadolinium Catalyst

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Abstract : Cobalt-gadolinium catalyst for Fischer-Tropsch synthesis was prepared by impregnation method with commercial silica gel, and its texture properties were characterized by BET, XRD, and TPR. The catalytic performance of the catalyst was tested in a fixed bed reactor. The results showed that the addition of gadolinium to the cobalt catalyst might decrease the size of cobalt particles, and increased the dispersion of catalytic active cobalt phases. The carbon number distributions for the catalysts was calculated by ASF equation.

Keywords : Fischer-Tropsch synthesis, cobalt-based catalysts, gadolinium, carbon number distributions
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