

Studies on Fischer–Tropsch Synthesis Over Co/Mesoporous Silica Hollow Sphere Catalyst

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For increasing the hydrothermal stability and acidity, the Cobalt catalyst supported on mesoporous silica hollow sphere (Co/SHS) was prepared for Fischer–Tropsch Synthesis (FTS), and characterized by N₂ physisorption, CO chemisorption, TPR, TPD, XRD and SEM techniques. The performance of catalysts was tested in a fixed bed reactor system under the conditions of 240°C, 2.5MPa, H₂/CO feed molar ratio of 2.0 for 100 h, and compared with those of Co/SiO₂ catalyst. The Co/SHS catalyst showed higher FTS activity and liquid fuel productivity for the middle distillate than Co/SiO₂ catalyst. The results suggest that the Co/SHS catalyst can be used as FT catalyst for GTL process applications.