

Hydrocarbon production of gasoline range from syngas on the co-precipitated cobalt-based hybrid catalysts; effect of cobalt/supporter ratio

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Fischer-Tropsch synthesis (FTS) reaction for the direct production of gasoline range hydrocarbons (C5-C9) from syngas was investigated on cobalt-based catalysts with different ratio of cobalt/supporter. The catalysts were synthesized by co-precipitation method in an aqueous solution containing Co and Al metal precursors (cobalt nitrate and aluminum nitrate with the weight ratio of Co/Al₂O₃=20/100) and Na₂CO₃ solution as a precipitating agent at 70°C in a slurry of ZSM-5 (Si/Al=25) as a supporter. The hybrid catalysts were characterized by BET surface, H₂-TPR, NH₃-TPD etc.