

Bimodal pore structure of CoO-CoAl₂O₄ catalyst support for Fischer-Tropsch Synthesis

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Gas to liquid (GTL) technology has been significant attractive because oil prices is expensive since the last decade. Liquid fuel from syngas over Fischer-Tropsch Synthesis contain much less sulfur, aromatics and other particulates than fossil fuels.

The reforming reaction and FT(Fischer-Tropsch) synthesis using Fe, Ru, Ni, and Co catalysts are the way to production of synfuel from natural gas.

Bimodal pore catalyst supports show a high catalytic activity, because macropores offer quick access to active phase on reactants/products and mesopores provide a spacious active surface area. The supports containing Cobalt aluminate spinel(CoAl₂O₄) structure offer good mechanical properties and chemical resistance.

In our study, we newly suggest a bimodal catalyst support consisting of CoO-CoAl₂O₄ with meso-macro pore structure in order to apply to synfuel production.