

### Effects of Ordered Mesoporous Supports for Fischer Tropsch Synthesis

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Ordered mesoporous silica supports were synthesized by sol-gel method with hydrothermal reaction using a structure-directing agent of organic molecules such as amphiphilic polymers and surfactants. The size and structure of mesopores was controlled by changing form of the surfactant through controlling pH of the solution. Further, by the addition of the framework materials like alumina and iron, it was possible to improve thermal stability. To investigate effects of frameworks and pH controlled surfactants in the mesoporous supports, the prepared catalysts were characterized by N<sub>2</sub> Physisorption, SAXS, TPR, and TEM techniques. The FTS reaction over Co based catalyst supported on mesoporous materials was carried out in a fixed bed reactor with the H<sub>2</sub>/CO molar ratio of 2:1, at 230°C and in 20 bar during 120 h. It was found that 10wt%Co/Fe-SBA-15(pH0.5) catalyst showed higher CO conversion than the other catalysts.