

Co/SBA-16: 对柴油组分有高选择性的费托合成催化剂

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Co/SBA-16: Highly selective Fischer-Tropsch synthesis catalyst towards diesel fraction

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摘要 使用浸渍法制备了一系列Co/SBA-16催化剂, 并通过氮物理吸附、X射线衍射、氢程序升温还原、氢化学吸附和透射电镜技术对催化剂行了表征。研究表明, 随着负载钴含量的增加, 金属钴的分散度降低了, 这是同Co₃O₄晶粒增长和比表面积降低相一致的。Co/SBA-16催化剂展示了高的一氧化碳转化率, 低的C₁选择性和高的C₅₊选择性, 特别对柴油组分有高选择性。

关键词: SBA-16 钴基催化剂 柴油组分 费托合成

Abstract: A series of Co/SBA-16 catalysts were prepared by the incipient wetness impregnation method and characterized with N₂ physisorption, X-ray diffraction, H₂-temperature programmed reduction, hydrogen chemisorption and transmission electron microscopy techniques. It was found that the Co⁰ dispersion decreased with increasing cobalt loading, being consistent with the increase of Co₃O₄ crystallite sizes and the decrease of BET surface area. The Co/SBA-16 catalysts show high CO conversion, low C₁ selectivity, high C₅₊ hydrocarbon selectivity, and especially high selectivity towards diesel fraction.

Key words: SBA-16 cobalt-based catalyst diesel fraction Fischer-Tropsch synthesis

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