

Co hydrogenation over cobalt supported mesoporous materials

1, 1,2, 1,3, 1,2,*
 1, 2UST; 3
 (djmoon@kist.re.kr*)

Mesoporous materials MCM-41 and SHS was prepared by sol-gel method and Co was supported by impregnation method. All the prepared catalysts were characterization by XRD, TPR, BET, SEM and TEM technics. It was considered that prepared materials have mesoporous structure. CO hydrogenation reactions were carried out under fixed bed reaction condition. The Co/SHS catalyst supported on periodic mesoporous silica hollow sphere (SHS) shows higher catalytic performance and C5+ selectivity in FTS reaction than the other catalysts. It was considered that catalytic performance of cobalt based catalysts supported on various silica in FTS depends on the cobalt particle size and support structure, which is caused by pore diameter and pore size distribution. It was found that Co/SHS catalyst showed superior performance compared to other catalysts due to well dispersed Co species and low Co Particle size.