

Segregation and Retention of Nobel Metals over Co/Al₂O₃ under different calcination atmospheres

Janardhan L. Hodala, 정재선, 양은혁, 이재석, 홍기훈,
임성수, 노영수, 문동주†
KIST
(djmoon@kist.re.kr†)

Cobalt-based catalysts have been preferred for Fischer-Tropsch Synthesis (FTS) over iron catalysts with its many advantages such as high conversion, long lifetime and selectivity towards higher hydrocarbons. The nature of support materials influences the dispersion, particle size and reducibility of deposited Co species, all of which impact the catalytic activity. The effect of deposition order of promoters were studied which impacted the formation of alumina-supported cobalt microstructure under different calcination atmospheres. It was found that the co-slurry impregnation method enhanced the retention of second metal. The deposition of Ruthenium via subsequent-impregnation method facilitates the formation of the hcp of Cobalt, yet it has lower activity due to the high yields of segregated forms.