

Effect of Mn loading on production of jet fuel fraction through Fischer-Tropsch synthesis with Fe-based granule catalysts

박현주, 이윤제, 김철웅, 김태완, 정광은, 채호정, 이상봉,
정순용*, 한정식¹
한국화학연구원; ¹국방과학연구원
(syjeong@kriect.re.kr*)

Fischer-Tropsch synthesis (FTS) was studied over Fe-based catalysts using alumina bead as support to investigate the effect of Mn loading on the production of jet fuel components. The FTS was conducted in a downdraft continuous fixed-bed reactor under a pressure of 15 atm at a temperature range of 270–330 °C. Catalysts were prepared by incipient wet method with the composition of 100Fe-6Cu- α Mn ($\alpha = 0.5 - 10.0$) on alumina bead support. CO conversion gradually increased with the increase of Mn loading. The optimum Mn loading for high selectivity of jet fuel fraction was in the range of 1 – 2 wt.%, and much low or high Mn loading had a adverse effect on the jet fuel fraction production.