

### Synthesis of light olefins from syngas on Fe-K/ZSM-5 catalyst : effect of Cu

박선주, 강석환, 오종혁, 배종욱, 이영우<sup>1</sup>, 전기원\*  
한국화학연구원; <sup>1</sup>충남대학교  
(kwjun@kriect.re.kr\*)

The effect of Cu contents on precipitated iron-based Fischer-Tropsch synthesis (FTS) catalysts was investigated. The 4K-xCu-20Fe/ZSM-5(Si/Al=25, x=0,2,4,6) catalysts prepared by impregnation method and tested in a tubular fixed bed reactor under the reaction conditions of T = 300°C, SV = 2000L/Kg cat/h and P = 1.0MPa. The catalysts were characterized by BET surface areas, XRD, TPR and NH<sub>3</sub>-TPD. TPR results showed that reduction temperature of Fe-based catalysts were shifted toward low temperature by addition of Cu promoter. The 4K-2Cu-20Fe/ZSM-5 (Si/Al=25), revealed the highest CO conversion and C<sub>2</sub>-C<sub>4</sub> selectivity among the examined catalysts.