

Aromatization of C4 over Mesoporous MO_x-ZSM-5 with CO₂

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(separk@inha.ac.kr*)

The ZSM-5 zeolite has been widely used as a catalyst for various catalytic applications such as cracking, isomerization, alkylation, and aromatization. In the aromatization reaction from lower hydrocarbons, the selectivity of the aromatic compounds including benzene, toluene and xylenes (BTX) is important due to feedstock for chemical industrial processes. The impregnation of Zn or Ga species was found to enhance the selectivity of aromatic compounds and decreasing the amount of cracked products by decreasing the acidity of ZSM-5. We synthesized metal oxide incorporated mesoporous ZSM-5 under the microwave irradiation (MO_x-ZSM-5). The MO_x-ZSM-5 was applied to the aromatization reaction of C4 fraction in fixed bed reactor under CO₂. The selectivity of aromatic compounds over MO_x-ZSM-5 was enhanced due incorporation of Zn and the mesoporous structure of the catalyst