Conversion of chloromethane into light olefins over CHA- and AEI-type zeolytic catalysts

박민범†, 권성준, 신용훈[1], 채호정[1]
인천대학교; [1]한국화학연구원
(mbpark@inu.ac.kr†)

The transformation of methane to chemical products has been interested, so a lot of researchers have developed direct or indirect route to convert from methane to hydrocarbons, methanol, etc. Among the routes, chloromethane-to-olefin (CMTO) reaction was especially attracting attention because this reaction is non-syngas indirect method. In this work, we prepared three pairs of CHA- and AEI-type zeolytic materials with similar crystallite size but with different framework atoms, and their CMTO reactions were compared according to the structure types as well as acidic properties. The AEI-type catalysts were found to be the lower ethene/propene ratios but the CHA-type catalysts exhibited a better activity and higher selectivity to light olefins. Among the CHA- and AEI-type zeolites prepared, H-TiAPSO-34 presented the highest selectivity to ethene and propene.