

## Effect of the binder on the physicochemical property and catalytic performance of HZSM-5 catalysts for MTP process

이기용, 이한규, 임선기\*

KAIST

(skihm@kaist.ac.kr\*)

The influence of the binder on the physicochemical properties of HZSM-5 catalysts and their catalytic performance in MTP process was studied. Silica, alumina, and aluminum phosphate solution (APS) were used as binders for the HZSM-5 catalysts. The prepared catalysts were bound with various binders, and their catalytic performances were evaluated in the single and binary binders system. Physicochemical properties of the prepared catalysts were investigated and characterized with XRD, N<sub>2</sub> adsorption/desorption, NH<sub>3</sub>-TPD, and compression test. It was found that the binary binders system was an effective way to improve mechanical strength while maintaining the high propylene selectivity. The proposed binder system should be a promising method for preparation of catalyst used in industrial process.