Study of a silicoaluminophosphate (SAPO) molecular sieve with ZON topology on water adsorption

Chang Shuai, 박성준, 조성준†
전남대학교
(sjcho@chonnam.ac.kr†)

Silicoaluminophosphate (SAPO) molecular sieves attracted much attention because of their characteristic properties in catalysis and adsorption. SAPO-ZON material possesses ZON topology which has 2-dimensional channel structure with 8-member ring pore opening (2.5 x 3.8Å, 3.7 x 3.4Å). It also has high thermal stability. BET surface area is 312.4 m^2/g containing both micropore and mesopore.
In this study, SAPO-ZON was prepared by hydrothermal synthesis method with mixing phosphoric acid, alumina, diethanolamine and tetramethylammonium fluoride (TMAF) as well as fumed silica used as silica source. Water adsorption capacity was measured using TGA method and showed a relative high performance.