

Synthesis of Nanomorphous Silicoaluminophosphates Using Structure-Directing Surfactants

서용범^{1,2}, 김정남¹, 이진웅¹, 유 룡^{1,2,*}
¹KAIST 화학과; ²KAIST 나노과학기술대학원
(rryoo@kaist.ac.kr*)

We synthesized nanomorphous ATO-type silicoaluminophosphate (SAPO) with ultrathin framework (< 10 nm) using ammonium-type organic surfactant which possessed SAPO structure-directing agent. The thickness of framework could be controlled by the number of ammoniums in head group of surfactants. Moreover, the mesostructure was varied from lamellar to worm-like disordered network as the framework thickness increased. Ultrathin ATO-type SAPO showed higher activity and enhanced selectivity for the hydroisomerization of n-heptane than bulk ATO-type SAPO. The improvement of catalytic activity is attributed to short diffusion path-lengths for branched products.