

CTAB as capping agent and mesopore porogen in Hierarchical Mordenite

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Hierarchical thin plate type mordenite was synthesized by using cationic surfactant as a mesopore porogen. Hierarchical mordenite with plate type morphology was synthesized using cationic surfactant under solvent free conditions, molecular template except Cetyltrimethylammonium Bromide (CTAB) as a porogen. TEM image shows 12-14 nm thickness morphology and Pore analysis by N₂ adsorption-desorption isotherm shows two-step H3 type hysteresis loop which tells that there are 12membered -ring micro pores and meso pores induced by CTAB in the mordenite crystal. Theses synthesized hierarchical mordenite was tested for acylation and Trans alkylation between 1,3,5-trimethy benzene and toluene which exhibited a superior catalytic activity such in terms of trimethyl benzene conversion and less deactivation compared to conventional mordenite.