

Asymmetric Kinetic Resolution of Racemic Epoxides in Bimodal Meso/Macroscopic Pore Structure

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A route to synthesize porous materials with a bimodal macro/ mesoscopic pore system has been investigated in this work. Polystyrene with sub-micrometer size was used as a template in the synthesis. The resulting mesoporous silica wall replicated inversely the morphology of polystyrene template and had highly ordered three-dimensional arrays of macro pores. Large and moldable meso/macro porous silica monoliths could be obtained in centimeter scale by using monodispersed polystyrene beads and PEO-PPO-PEO/SBA-15 sol solutions. These bimodal structured porous silicates have been used as supports for asymmetric kinetic resolution of racemic epoxides to synthesize optically pure epoxide.