

### Al Doped Mesoporous TS-1 for One-Pot Synthesis of Caprolactam from Cyclohexanone

김혜련, 유선미, 박상연\*  
인하대학교  
(separk@inha.ac.kr\*)

Caprolactam is the main precursor for synthesis of Nylon 6 with growing demand, there is an extensive research ongoing for new synthesis processes, which are economically favorable and environmentally friendly. TS-1 was reported as promising heterogeneous catalyst for one-pot synthesis of caprolactam from cyclohexanone. Recently, mesoporous zeolites contain both advantage of zeolites and mesoporous materials have been attached much attention due to their enhanced catalytic performance compared with microporous zeolites. In present work, we applied simple demetallation method to synthesize Al doped mesoporous TS-1 by  $H_2O_2$  treatment under microwave irradiation. These materials showed improved physical properties compared with microporous TS-1. And their catalytic behavior was tested by ammoximation and Beckmann rearrangement of cyclohexanone.