SYNTHESIS AND CHARACTERIZATION OF MESOPOROUS AND MICROPOROUS H-ZSM-5 AND ITS ACTIVITY IN THE REACTION OF 3,4-DIMETOXYBENZALDEHYDE AND PROPYLENE GLYCOL

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Abstract : 
Mesoporous and microporous H-ZSM-5 (H-ZME and H-ZMI) as catalyst in the acetalization reaction of 3,4-dimethoxybenzaldehyde and propylene glycol have been studied. Mesoporous and microporous ZSM-5 as catalyst were prepared and characterized by X-ray diffraction, infrared spectroscopy, N$_2$ adsorption-desorption isotherms and measurement of acidity by pyridine adsorption techniques. Catalytic activity of H-ZME and H-ZMI in acetalization reaction showed that the conversion was 5.98% and 3.79%, respectively. The selectivity for H-ZME was 41% and 27% for H-ZMI.

Keywords : Mesoporous H-ZSM-5, microporous H-ZSM-5, acetalization reaction, catalytic activity