Catalytic Activity of Nanosized MnO_2 – Mesoporous Zeolite A with Acetic Acid

모용환, 이승엽, 박상언*
인하대학교
(separk@inha.ac.kr*)

The VOCs, which mean Volatile Organic Compounds, can be easily evaporated to the air and its vapor can be harmful for human health such as acetic acid, toluene, acetaldehyde. Moreover, acetic acid that is one of the VOC has been smelled like an unpleased trash smell. To remove smell of VOC, we synthesized mesoporous zeolite A which has contained nano magnecia, MnO_2, in mesopore via direct synthesis method. In detail, carbon template used for making mesopore in zeolite precursor and diffusing MnO_2 inside the mesopore. The crystallization of zeolite was carried out the microwave irradiation instead of conventional method.

Catalytic activity of nanosized MnO_2 – mesoporous zeolite tested with acetic acid in fixed bed reactor. Gas after reaction was analyzed by GC – FID detector. Its conversion was 42%. (T=230°C, Catalyst amount = 0.5g, WHSV = $1h^{-1}$)