

Baeyer–Villiger Oxidation of Cyclohexanone over Synthesized Cancrinite–type Zeolite Catalyst

구정분, 한상철, 박상언*
인하대학교
(separk@inha.ac.kr*)

Cancrinite–type zeolites were synthesized through hydrothermal condition for 84 hours at 170°C. And Sn containing Cancrinite zeolites were prepared in two ways: One was direct synthesis by $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ at the preparation of precursor gels and the other was prepared via ion–exchange method using $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ following the preparation of H–form of Cancrinite through the ion–exchange with $\text{NH}_4(\text{NO}_3)_2$.

The prepared catalysts were characterized using powder X–ray diffraction, SEM, UV–VIS–NIR, FT–IR, BET, TGA, NH_3 –TPD and ICP analysis and also liquid phase Baeyer–Villiger oxidation of cyclohexanone was investigated.

Sn containing Cancrinite zeolites catalysts were found to be an active and selective for caprolactone with higher selectivity the liquid phase Baeyer–Villiger oxidation of cyclic ketone in acetonitrile using hydrogen peroxide as oxidant.

These results showed the Sn containing Cancrinite would be highly active and selective catalysts for the successively Baeyer–Villiger oxidation besides zeolite beta.