

Effect of thermal treatment on microporous titanium oxide

이승관, CHANGSHUAI, 조성준[†]

전남대학교

(sjcho@chonnam.ac.kr[†])

TiO₂ as a green catalysts has been studied extensively because of its chemical stability and non-toxic property. Recently the hydrothermal conversion of bulk TiO₂ in the presence of LiOH at 400 - 440 K. The obtained TiO₂ contained micropore mostly that is suitable for catalytic application as a substrate. In this study, This nanostructured TiO₂ can be converted to crystalline anatase phase when it is calcined at high temperature. Series of nanostructured TiO₂ were calcined at different temperatures, 673 - 973 K to investigate the change of physicochemical properties. The samples were characterized using the scanning electron microscopy, transmission electron microscopy, X-ray diffraction and BET measurement. The nanostructured TiO₂ showed a comparable thermal stability up to 773 K referred from the change of surface properties.