

Synthesis and Characterization of High-surface-area ZrO_2 as a Catalyst Support using Ionic Liquids by Sol-Gel Method

최은형, 김대현, 박민우, 유계상, 이현주, 홍석인¹, 문동주*
한국과학기술연구원; ¹고려대학교
(djmoon@kist.re.kr*)

Zirconia has attracted considerable interest for applying as a catalyst or catalyst support for a number of reactions since it has varied chemical properties including reducing, oxidizing, and acidic and basic properties. Especially, zirconia based catalyst has some advantages of wider range of operating temperature and less sintering in water gas shift (WGS) reaction because of its thermal stability. So, an important aspect in the preparation of ZrO_2 catalyst supports for applying WGS reaction is the development of ZrO_2 particles with high surface area, controlled porosity and tailor-designed pore size distribution.

In this study, zirconia support has been synthesized by modified sol-gel method using various ionic liquids as a template. Furthermore, Pt/ ZrO_2 catalyst was prepared and tested to investigate the catalytic performance for water gas shift reaction.