

Effects of tungsten oxide on noble metal catalysts supported on gamma-alumina for hydrodeoxygenation of guaiacol

홍윤기, 엄희준¹, 이관영*
고려대학교; ¹고려대학교 화공생명공학과
(kylee@korea.ac.kr*)

As the sustainable alternative for petroleum resources are increasingly demanded, the biomass has attracted attention as an alternative feedstock for fuels and organic chemicals. The liquid fuels from biomass, known as “bio-oils”, should be chemically upgraded with total or partial elimination of the oxygen and catalytic hydrodeoxygenation (HDO) for a practical use comparable to petroleum. As a target reactant for HDO, Guaiacol is an adequate molecule representing the components of lignin-originated bio-oils, because it retains two functional groups (phenolic and methoxy groups) characterizing lignin molecule. Therefore, we selected guaiacol as a model reactant for the HDO reaction of bio-oils.

In this study, the tungsten oxide on the alumina, versatile acid support, was applied to noble metal catalysts for the HDO. It was expected that the acid sites from tungsten oxide have synergy effects with noble metals on the HDO.