

Upgrading of pyrolysis oils over tungstate-zirconia-supported Ru Catalysts using the fixed-bed continuous flow system

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The wood-derived bio-oil has a severe problem as a transportation fuels in high acidity, low energy density, high viscosity and water contents because of high oxygen contents in bio-oil. The high oxygen contents of bio-oil can be decreased by catalytic upgrading such as hydrodeoxygenation (HDO) which produces oxygen-free products. However, bio-oil upgrading technology has a difficulty in catalysts deactivation, especially in coke formation, resulting in reactor plugging. The purpose of our study is to determine catalyst having high catalytic activity and showing less formation of cokes for bio-oil HDO reaction using fixed-bed continuous flow reactor. From the several supported Ru catalysts test, tungstate-zirconia was considered as optimum support for bio-oil upgrading.