

## Effect of CoMoP Catalysts on Hydrodeoxygenation of Guaiacol as Bio Oil Model Compound

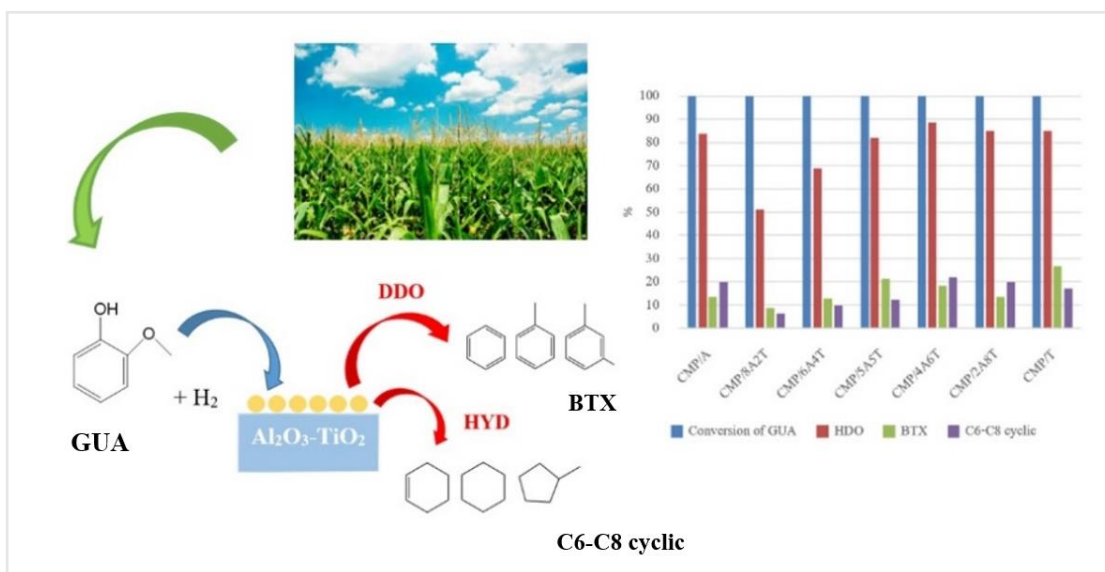
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Bio-oil from biomass transformation is an alternative energy that is interesting because biomass is measureless substrate. However, Bio-oil contains several oxygen compounds such as carboxylic acid, alcohol, aldehyde and ketone derivative which cause many problems to the engine. Therefore, the upgrading bio-oil via hydrodeoxygenation is necessary. The research is required in the area of the activity and stability of CoMoP (CMP) supported on  $\text{Al}_2\text{O}_3\text{-TiO}_2$  (AT) catalysts for hydrotreating. The reaction testing was set at 300°C 50 bars for 2 hours in a batch autoclave reactor. Seven series of supports were prepared by sol-gel method in order such as Al:Ti molar ratios of A, 8A2T, 6A4T, 5A5T, 4A6T, 2A8T and T after that impregnated by CoMoP complex solution. It was found that Ti can improve HDO reactivity, the catalyst with 5A5T support can effectively promote HDO reactivity and selectivity of producing benzene, toluene and xylene (BTX). In Addition, the stability was tested by changing the feed every 3 hours to measure the activity of HDO and selective of BTX for a period of 30 hours. We found that the CMP/5A5T had an effective stability for a time period over 30 hours and the yield of BTX was higher than CM/5A5T(SK) which was prepared by the sol-gel kneading method.



**Keywords** Bio-oil; Hydrodeoxygenation; CoMoP catalysts