

Preparation of Cu/Zn/Al catalyst and the activity in hydrogenolysis of mixed acid into corresponding alcohols

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Seaweeds, as abundant biomass sources, do not contain process-suppressing lignin that the lignocellulosic biomass is composed of. Because of their easier processibility, seaweeds are promising biomass resource to produce biofuels and biochemical. Seaweeds are biochemically processed into a mixture of acids, which is mostly composed of acetic acid, 1-propionic acid, and 1-butyric acid, and then hydrogenated into their corresponding alcohols using 1-pot synthesis of catalytic hydrogenolysis. Cu/Zn/Al catalysts were synthesized and used for the hydrogenolysis of mixed acid feeds in a continuous reactor. The catalysts were prepared using several methods, and their activity and stability were evaluated upon varying reaction conditions, such as mixed acid concentration and space velocity. The prepared catalysts were characterized using TEM, XRD, and N₂O chemisorption, and other tools to understand the surface science and catalytic activity on them.