

Biodiesel production of low grade feedsstocks over Zn-Zr mixed metal oxide catalysts

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A single step method was developed for biodiesel production from low quality, high free fatty acid(FFA) bio oil using a heterogeneous Zn and Zr mixed oxides. Effects of metal oxide ratio, molar ratio of methanol and oil, catalyst amounts, and reaction temperature on the FAME conversion were studied. The catalysts were evaluated for potential application in transesterification and esterification of palm sludge oil(PSO) with methanol to produce biodiesel. In a single step, Zn-Zr mixed metal oxide catalysts exhibited high catalytic activity(~90%) after 2h of reaction at 200°C.