Transesterification of rapeseed oil using activated carbon fiber-supported base catalyst for biodiesel production

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Biodiesel, a promising non-toxic, eco-friendly alternative fuel, is produced by transesterification of triglycerides in oils with alcohols and catalysts. In conventional process of biodiesel, homogeneous base catalysts show high yield of FAME (fatty acid methyl ester) derived from edible oil. But these catalysts make saponification reaction which interrupts transesterification. Especially, homogeneous catalytic reaction requires separation and purification steps, which account for a great part of producing biodiesel. Heterogeneous catalyst have advantages of non-toxic and recyclable particles, separation from product. In this work, we tried to modify activated carbon fiber as support of base catalyst and checked performances of transesterification. Influences of calcination temperature, concentration of base were studied.