

Optimization of the process for biodiesel production using various catalysts

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In this study, transesterification and esterification were investigated by chemical and enzymatic catalysts. In case of chemical catalyst, optimal conditions such as temperature, agitation speed and catalyst concentration were determined to be 80 °C, 300 rpm, 1% of NaOH, respectively. And then conversion yield reached over 96% at 50 min. Moreover, in case of enzymatic process optimal conditions such as temperature, agitation speed, water contents and enzyme concentration were determined to be 45 °C, 250 rpm, 10% of water and 20% of immobilized lipases, respectively. The maximum conversion yield was 98 % at 4 h.