

Aspects regarding the kinetics of the transesterification process of vegetable oils

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Abstract With the recent increase in petroleum prices and the uncertainties concerning petroleum availability, there is a renewed interest in alternative sources of energy. Biodiesel is an efficient, clean, natural energy alternative to petroleum fuels, to be used in Diesel engines. Transesterification of vegetable oils with simple alcohol has long been a preferred method for producing biodiesel fuel. In the present study, the activation energy of the transesterification of the vegetable oils in supercritical methanol at various temperature dependencies was calculated. The variation with temperature of the activation enthalpy in supercritical conditions was estimated too. The calculated values are in good accordance with the results reported in the literature. The values of activation thermodynamic state functions of vegetable oil transesterification provides informations that can be used to predict the extent of the reaction at any time under particular conditions.

Keywords: biodiesel, renewable fuels, transesterification, activation energy, activation enthalpy.
