ACTIVATED CARBON AS A SUPPORT FOR BASE CATALYST IN THE TRANSESTERIFICATION REACTION OF VARIOUS VEGETABLE OILS

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Several types of vegetable oils (rapeseed, sunflower, corn) are used as source of triglycerides for the preparation of biodiesel. Homogeneous alkaline catalyst, that has several drawbacks, are usually used in the conventional chemical transesterification. To eliminate homogeneous process problems, heterogeneous basic catalysts was used in methanolysis of vegetable oils. Activated carbon was prepared from beech tree-wood and used as support for KOH catalyst. Biodiesel production process was carried out at constant temperature 60 ˚C, reaction time 1 – 4 h, and 0.5% - 1.5% active phase of catalyst and 2 molar equivalents of methanol (based on feedstock fatty acids). The influence of parameters on the biodiesel yield at varied condition was studied. The catalyst showed good performance within a high yield of methyl esters (approximately 80%) and separation of the catalyst from the liquid mixture is easy.

Keywords: biodiesel, activated carbon, vegetable oils, transesterifications, heterogeneous basic catalyst