UNIVERSITI TEKNOLOGI MARA
Cawangan Terengganu
Kampus Bukit Besi

# TITLE:
# THE FUNCTIONAL GROUP K/AC CATALYST FOR BIODIESEL PRODUCTION


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# AUTHOR'S DECLARATION

" I hereby declare that this report is the resof my own work except for quotations and summaries which have been duly acknowledged."

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# ABSTRACT

Potassium activated carbon (K/AC) catalysts are attractive for transesterification and important step in the production of biodiesel. In this study, the preparation of various K/AC catalysts at different composition mass ratio (1:1, 1:3 and 1:4) in relation to the characterization and functional groups of the derived biomass K/AC which can be produced from OPKS as the carbon source.

The fourier transform infrared spectroscopy (FTIR) was used to determine the important functional groups that affect the reactivity and activity of catalyst. Presence of hydroxyl (-OH), carbonyl (-C=O), and aromatic (-C=C) functional groups was observed in the results of the FTIR spectra contributing to a vital increase in catalytic activity.

The surface chemistry of the catalyst was found to be a strongly dependent on the K:AC mass ratio, with potassium-rich compounds having a higher basicity and altered functional groups compared with the K-deficient compounds.

The research presents an eco-friendly approach, indicating the potential K/AC catalyst in biodiesel production from agricultural wastes. Future work should focus on catalyst optimisation, biodiesel synthesis testing and scalability for industrial use.

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