UNIVERSITI TEKNOLOGI MARA
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TITLE:

THERMAL STABILITY OF POTASSIUM METAL SUPPORTED BY ACTIVATED CARBON (K/AC)

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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

This study was conducted to investigate the effect of the K/AC mass ratio at ratios (1:1,1:3 and 1:4) on the thermal stability of the K/AC catalyst using OPKS which is an activated carbon for biodiesel production. Next, this report also provides a variety of information and background that emphasizes the importance of thermal stability on biodiesel production and the role of K/AC catalysts. Next, the methodological details available also show the preparation steps of the K/AC catalyst by using TGA analysis to analyse the heat. In addition, this report also displays the results and discussion of the results on the TGA graph to compare the thermal stability of the catalyst at different K/AC ratios. The results have shown that the K/AC ratio significantly affects thermal stability with a ratio of 1:3 showing the highest stability compared to mass ratios of 1:1 and 1:4. The catalyst at this mass ratio of 1:3 exhibits that it loses a low initial mass at the first peak which is 20% and the remaining mass is 80% and as much as 50% mass loss at the second peak making it more thermally stable among the ratios tested. With this discovery proving the use of OPKS as a raw material for activated carbon can strengthen waste and biodiesel production. In conclusion, this study recommends further evaluation of the economic feasibility and environmental impact of producing activated carbon from existing and readily available agricultural by-products that can support sustainable biodiesel production.

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