

**SYNTHESIS AND CATALYTIC PERFORMANCE OF
MIXED OXIDE (Cr, Ti) CATALYST IN
ESTERIFICATION OF PALM FATTY ACID
DISTILLATE TO FATTY ACID METHYL ESTER**

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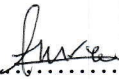
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I declare that the work in the thesis was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the results of my own, unless otherwise indicated or acknowledge as reference work.

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ABSTRACT

Heterogeneous catalyst chromium-titanium mixed oxide was prepared and evaluated in the conversion of palm fatty acid distillate (PFAD) to fatty acid methyl ester (FAME) by esterification process. The reaction occurred in a batch reactor with the temperature of 160 °C. The catalysts then were characterized by FTIR. CrTi₂O₂ shown the lowest density compared to others which indicated that it have the high conversion of FAME content in the product mixture after the esterification process of PFAD. The performances of catalyst give high FAME content with the ratio of 1:2 metals ratio with calcinations temperature of 500°C. This result show Cr-Ti has the potential as a solid catalyst in the esterification of PFAD to produce FAME.