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Investigation of Biodiesel Production from Canola Oil using Mg-Al Hydrotalcite Catalysts

of

Oğuzhan İLGEN<sup>1</sup>, İsmail DİNÇER<sup>1</sup>, Meltem YILDIZ<sup>1</sup>, Ertan ALPTEKİN<sup>2</sup>,  
Nezahat BOZ<sup>1</sup>, Mustafa ÇANAKÇI<sup>2</sup>, Ayşe Nilgün AKIN<sup>1</sup>

Chemistry

<sup>1</sup>Kocaeli University, Chemical Engineering Department, Kocaeli-TURKEY  
e-mail:akinn@kou.edu.tr

<sup>2</sup>Kocaeli University, Department of Mechanical Education, Kocaeli-TURKEY

 [Keywords](#)  
[Authors](#)



[chem@tubitak.gov.tr](mailto:chem@tubitak.gov.tr)

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**Abstract:** Biodiesel produced by the transesterification of vegetable oils is a promising alternative fuel to diesel because of limited fossil fuel resources and environmental concerns. The use of heterogeneous catalysts greatly simplifies the technological process by facilitating the separation of the post-reaction mixture. The purpose of the present work was to examine a heterogeneous catalyst, in particular, Mg-Al hydrotalcites, to produce methyl esters of canola oil. In this study, the transesterification of canola oil with methanol was studied in a heterogeneous system, using Mg-Al hydrotalcites as solid base catalysts. The results showed that methanol is the best alcohol for this reaction condition. The highest triglyceride conversion rate of 71.9% was achieved after 9 h of reaction at 60 °C, with a 6:1 molar ratio of methanol to canola oil and a 3 wt% catalyst with 125-150  $\mu$  m particles.

**Key Words:** Biodiesel, transesterification, Mg-Al hydrotalcite, heterogeneous base catalyst

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