

## **Study of Ether Species Effects on Physicochemical Properties of Palm Oil Ether Monoesters as Novel Biodiesels**

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**Abstract :** Five palm oil ether monoesters utilized as novel biodiesels were synthesized and structurally identified in the paper. Investigation was made on the effect of ether species on physicochemical properties of the palm oil ether monoesters. The results showed that density, kinematic viscosity, smoke point, and solidifying point increase linearly with their CH<sub>2</sub> group number in certain relationships. Cetane number is enhanced whereas heat value decreases linearly with CH<sub>2</sub> group number. In addition, the influencing regularities of volumetric content of the palm oil ether monoesters on the fuel properties were also studied when the ether monoesters are used as diesel fuel additives.

**Keywords :** biodiesel, palm oil ether monoester, ether species, physicochemical property

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