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Development of Calophyllum inophyllum Biodiesel and Analysis of its Properties at Different Blends

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Abstract: Biodiesel is a gifted substitute as an alternative fuel has gained significant attention due to the predicted littleness of conventional fuels and environmental concern. The utilization of liquid fuels such as biodiesel produced from Calophyllum inophyllum oil by transesterification process represents one of the most promising options for the use of conventional fossil fuels. The Calophyllum inophyllum oil is converted into Calophyllum inophyllum methyl ester known as biodiesel processed in the presence of homogeneous acid catalyst. The physical properties such as Kinematic viscosity, Density, Calorific Value, Cetane number, Fire point and Flash point were found out for Calophyllum inophyllum methyl ester at different blends. The objective of this study is to develop the mathematical relationships between these properties among various biodiesel blends. There is a high regression between several properties of biodiesel and the relationships between them are detected to be considerably regular. The same characteristics study was also carried out for the diesel fuel. The values obtained from the Calophyllum inophyllum methyl ester is nearly matched with the values of conventional diesel and can be used in the normal diesel engine without any modification.

Key Words : Calophyllum inophyllum oil, Biodiesel, Alternative Fuel, Properties Correlation, Transesterification.

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