

Review Report Of

**Analysis of combustion and vibration characteristics of diesel engine
fuelled with diesel-biodiesel and Iso-propyl alcohol blends**

**A thesis submitted in the partial fulfillment of the requirement for the award for the degree
of**

**BACHELOR OF TECHNOLOGY
IN
MECHANICAL ENGINEERING**

Submitted by

K.TEJESWAR REDDY	(18815A0380)
T.JNANESWARAO	(18815A0361)
Y.LAXMI NARAYANA	(18815A0373)
T.RAJESH	(18815A0382)

Under the guidance of

K.V.N.S.RAMA KRISHNA, M.Tech
Assistant Professor
DEPARTMENT OF MECHANICAL ENGINEERING



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(NBA accredited)

(Affiliated to Jawaharlal Nehru Technological University Kakinada, A.P)
MAKAVARAPALEM, NARSIPATNAM (RD), VISAKHAPATNAM-531113
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MAKAVARAPALEM, NARSIPATNAM (RD), VISAKHAPATNAM-531113



DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to certify that project report is entitled “Analysis of combustion and vibration characteristics of diesel engine fuelled with diesel-biodiesel and Iso-propyl alcohol blends” was carried out by **K.TEJESWAR REDDY (18815A0380), T.JNANESWARAO (18815A0361), Y.LAXMI NARAYANA (18815A0373), T.RAJESH (18815A0382)**, in partial fulfilment of requirements for the award of the degree of bachelor of technology in “**MECHANICAL ENGINEERING**” by Jawaharlal Nehru Technological university , Kakinada During the years 2020-2021.

A handwritten signature in blue ink, appearing to read "Ramesh", with a long horizontal stroke extending to the right.

Mr. K.V.N.S.RAMA KRISHNA
(PROJECT GUIDE)

A handwritten signature in blue ink, appearing to read "Hari", with a long horizontal stroke extending to the right.

Mr. V.HARI KIRAN
(HEAD OF THE DEPARTMENT)

EXTERNAL EXAMINER

ABSTRACT

The world is presently confronted with the twin crises of fossil fuel depletion and environmental degradation. In Search for an alternative fuel, which promises a harmonious correlation with sustainable development, energy conservation, efficiency and environmental preservation, has become highly pronounced in the present scenario. Cooking oils physical and chemical properties are close enough to mineral diesel and may be used as alternative to diesel, It was found that engine was difficult to start at pure form of Cooking Oil due to high viscosity and in long-term use of Cooking oils or their blends pose various operational and durability problems in the engine, and need to be modified(biodiesel) .Transesterification is found to be an effective technique for the Cooking oil formulation as a fuel. Biodiesel was prepared and used in Diesel engine for replacing the usage of petrodiesel. Biodiesel is one of the most popular alternative fuels. The usage of biodiesel is increasing day by day. Therefore, all effects of biodiesel on internal combustion engines must be known.

The objective of the present investigation is to explore the influence of ternary (diesel-biodiesel-alcohol) fuel blends on the combustion and vibration parameters of a variable compression ratio compression ignition engine. Cooking oil biodiesel and isopropyl alcohol were blended with conventional diesel to make a ternary fuel. The blend of biodiesel-diesel (B20) was made in proportion of 20% and 80% by volume, respectively. Furthermore, isopropyl alcohol was added at diverse proportions (ie, 0.2%, 0.4%, 0.6%,0.8% and 1%) to the B20 fuel. The investigation was carried at different loads on the engine (6kg load and 12kg load) .