

A

Report on

**EFFECT OF SESAME OIL BASED BIODIESEL ON THE  
PERFORMANCE OF A VERTICAL DIESEL ENGINE**

A Project report submitted for the partial fulfillment of the requirements for award  
of Degree of

**BACHELOR OF TECHNOLOGY  
IN  
MECHANICAL ENGINEERING**

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PERMANENTLY AFFILIATED TO JNTU-KAKINADA, ACCREDITED BY NBA &  
NAAC, APPROVED BY AICTE, RECOGNISED BY UGC 12f & 2b)  
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# DEPARTMENT OF MECHANICAL ENGINEERING

## AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY



### CERTIFICATE

This is to certify that the project entitled “**EFFECT OF SESAME OIL BASED BIODIESEL ON THE PERFORMANCE OF A VERTICAL DIESEL ENGINE**” is the record of the work carried out by **K.GANESH (Regd No. 19815A0340)**, **V.SAI CHANDU (Regd No. 19815A0382)**, **B. ANJANEYULU (Regd No. 19815A0397)** **S.NIKHIL KUMAR (Regd No. 19815A0373)** students of final year B. Tech in the department of “**MECHANICAL ENGINEERING**”. This work is done for the partial fulfillment for the award of **BACHELOR OF TECHNOLOGY** during the year 2021-2022.

Project Guide

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## **ABSTRACT**

In the last few decades the energy demands in the developing countries have increased tremendously. This has become the major reason for depletion of fossil fuel, which are the primary sources of energy. Various renewable alternatives in form of plant based fuel sources are investigated to reduce dependency on the fossils. In this paper we have discussed how blend of sesame oil and diesel can be used as an alternative for diesel. Two compositions of sesame oil and diesel have been prepared and performance analyses of these two blends are studied experimentally in CRDI VCR Engine. Performance parameters obtained are compared with pure diesel. The results showed a maximum BTE and ITE of 30.55% and 39.04%, respectively are obtained for the blend B10D90 when engine was run on full load. Bio-diesel enhanced the CO<sub>2</sub> and NO<sub>x</sub> emissions but reduced the CO emissions as compared to diesel.