

A

Report on

**PERFORMANCE AND EMISSION CHARACTERISTIC OF DIESEL ENGINE  
FUELED WITH BIO DIESEL-ETHONOL-DIESEL**

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

**BACHELOR OF TECHNOLOGY**

**IN**

**MECHANICAL ENGINEERING**

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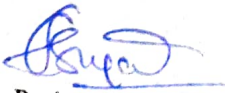
**2018-2022**

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**CERTIFICATE**

This is to certify that the project entitled "**PERFORMANCE AND EMISSION CHARACTERISTIC OF DIESEL ENGINE FUELED WITH BIO DIESEL-ETHONOL-DIESEL**" is the record of the work carried out by **PRAGADA GIRI ANANDA KUMAR (19815A0367)**, **MUVVALA KRISHNARAO (19815A0353)**, **MINAKURTHI SATISH(19815A0348)**, **VEMPALI SAI SANKAR JAYADEEP(19815A03A8)** 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.

  
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## **ABSTRACT**

The world is currently dealing with two crises: the depletion of fossil fuels and environmental deterioration. In the current climate, the search for an alternative fuel that offers a harmonious relationship with sustainable development, energy conservation, efficiency, and environmental preservation has intensified. Vegetable oil's physical and chemical qualities are similar enough to mineral diesel that it may be used as a substitute for diesel. However, long-term usage of vegetable oils or their mixes causes a variety of engine operating and durability issues that must be addressed (biodiesel). Transesterification is found to be an effective technique for the vegetable oil formulation as a fuel. The purpose of this research is to see how a biodiesel mix with ethanol impacts diesel engine performance and emissions. The higher amounts of ethanol additives were added to the biodiesel blend in varying amounts of 5%, 10%, and 15%. Thermophysical characteristics such as density, calorific value, viscosity, flashpoint, fire point, cloud point, and pour point of test fuel samples were evaluated using ASTM standards. The experiment employed four distinct loads with a compression ratio of 17.5. The performance and emissions of a diesel engine were thoroughly investigated.