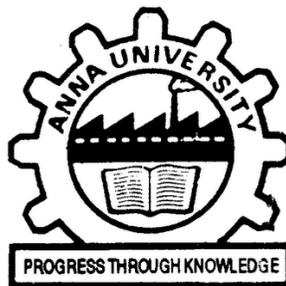


# **TECHNO-ECONOMIC ANALYSIS OF BIOFUEL – AN ALTERNATIVE TRANSPORTATION FUEL**

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## **Abstract**

Fossil fuels are presently used for residential, commercial, industrial, transportation purpose and even to generate electricity. The wide-scale use of fossil fuels ranges from coal at first stage and petroleum later, and even to fire steam engines, which enabled the Industrial Revolution to evolve. . The invention of the internal combustion engine and its use in automobiles and trucks greatly increased the demand for gasoline and diesel oil, both made from fossil fuels. There are a number of problems associated with fossil fuels usage. Most of which stem from the by-products created when they are burned to create energy. Exhaust emissions from petrol-driven cars include, in addition to CO<sub>2</sub> and water vapour, hydrocarbons, nitrogen oxides and CO. Volatile organic compounds are also emitted into the atmosphere through evaporation from fuel tanks, carburetors and refuelling stations. Biofuels – liquid fuels derived from renewable resources such as plant or animal materials – are entering the market, driven by factors such as oil price spikes and the need for increased energy security. Based on this perspective, the aim of the present dissertation is to look at biofuel as an alternative source of energy for transportation. The technological analysis will be done in the present work by studying the process involved in the biofuel production. This dissertation will also compare the quality, performance and emission intensity level of biofuel with that of conventional fuel, with respect to transportation purpose. This comparative study will be used to estimate the economic and environmental benefit the biofuel bears to be used as an alternative transportation fuel.