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A PROJECT REPORT ON

DESIGN AND DEVELOPMENT OF BIO-DIESEL PLANT

Submitted in partial fulfilment of the requirements for the award of

Bachelor of Engineering
IN
MECHANICAL ENGINEERING

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ABSTRACT

Sustainable development of natural resources in this technological galloping era goes hand in hand with the issues like cleaner environment, plantation of oil providing trees etc. Considering the petroleum crises, rapidly increasing prices, uncertainties concerning petroleum fuels availability and environment and type of land required for the growth of Biodiesel plants available with India, fuel from renewable products like edible/non-edible oil cannot be ignored.

Biodiesel have the distinct advantages of being renewable, biodegradable, & eco-friendly fuel. During the recent years, in the field of alternative fuels especially in the area of Biodiesel, research has been extensively carried out and different samples of Biodiesel have been prepared considering the scope, availability and economics of various edible and non-edible oils. Biodiesel from Mahua, Linseed, Rice Bran, waste cooking oil, Crude Palm, Castor, Jatropha & Karanja have already been prepared and successfully tested in diesel engines & vehicles. Small capacity of reactors of 5 & 10 liters biodiesel were designed and developed also for experimental purpose.

As per Ministery of Rural Development, the National Mission on Bio-diesel is proposed to be implemented in two phases. The first phase will involve a demonstration stage for plantation of jatropha on four lakh hectares, and associated research activities for establishing the commercial viability of the fuel. Phase two will involve self-sustaining expansion of the bio-diesel programme. The overall objective of the national mission is to promote the creation of national infrastructure for production of bio-diesel through cultivation of jatropha plant and processing of its oil

Therefore, the objective of this project is to provide an economical solution to this problem. The batch size unit is designed and developed considering the rural operative conditions and is suitable for biodiesel production on community basis or for small entrepreneurs. The unit is not very expensive therefore presents a viable solution for production of biodiesel for the replacement of the costly fossils in the rural.