A PROJECT REPORT ON

DESIGN AND SIMULATION OF MICROCONTROLLER BASED GOVERNOR CONTROLLED IC ENGINE AND ALTERNATOR SET USED FOR GENERATION OF ELECTRICITY USING BIOGAS

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Submitted by:

PRITHVI KOMARPANT	(4CB05EC076)
RAO SIMI SUDARSHAN	(4CB05EC085)
SAHANA ACHAR K	(4CB05EC093)
SOWMYASHRI K	(4CB05EC105)

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Under the Guidance of:

RAGHAVENDRA SOODA, B.E.

(Lecturer, E&C Department)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Canara Engineering College

(AFFILIATED TO VTU, BELGAUM)

Benjanapadavu, Bantwal – 574219, D. K. KARNATAKA

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ABSTRACT

For rural level application there are many promising existing technologies such as sun, wind, water, wood and biogas. These technologies are small scaled and necessarily de centralized, they can be well suited to the needs of villages and small communities. They can be low in cost, relatively simple in construction and maintenance made of materials available in villages and small towns and non-polluting. With each price increase in the worlds diminishing oil supply, renewable energy sources are made more attractive. The decentralized supply of this renewable energy sources-wind power, solar, water power and bio fuels—matches the decentralized settlements of the rural south. Planners and program administrators are increasingly convinced that these technologies have a major role in the energy supplies of rural communities.

Biomass power also called biopower is electricity produced from biomass fuels. Biomass consists of plant materials and products. Biomass fuel include residue from wood, paper product industries, residues from food production and processing, trees and grasses grown specially as energy crops, and gaseous fuels produced from solid biomass, animal waste and landfills. Biomass can be converted into electricity in one of the several processes:

1. Solid biomass is converted into fuel gas in a gasifier. Biomass contains methane and carbon dioxide. The biogas can be used for heating or for electricity generation in a modified combustion engine

2. The majority of biomass electricity is generated today using a steam engine. In this process, biomass is burned in a boiler to make steam. The steam then turns a turbine which is connected to a generator that produces electricity. An approach has been made to develop a project consists of biogas operated spark ignition engine-generator set used for generation of electrical power.