

# A PORTABLE UNIT TO PRODUCE BIOGAS FROM THE UTILIZATION OF KITCHEN WASTES

(Sponsored by KSCST, Bangalore)

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## A PROJECT REPORT

Submitted to

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in partial fulfillment of the requirements for the award of the degree of  
**Bachelor of Engineering**



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JUNE 2013

# Abstract

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Biogas is a renewable energy source, which can be produced from any organic waste such as cow dung, animal, plants, kitchen wastes etc are the inputs to produce biogas. Solar energy and wind energy which are also renewable energies requires geological support and uses hitch technologies. But biogas energy requires only a systematic steps to under go by organic wastes.

The anaerobic digestion of kitchen waste produces biogas, a valuable energy resource. Anaerobic digestion is a microbial process for production of biogas, which consists of primarily methane ( $\text{CH}_4$ ) & carbon dioxide ( $\text{CO}_2$ ). The continuously-fed digester requires addition of sodium hydroxide ( $\text{NaOH}$ ) to maintain the alkalinity and pH to 7. This also requires inoculum of previous cow dung slurry along with kitchen waste in order to produce biogas.

In our college we have two hostels and canteen, where daily a large amount of kitchen waste is obtained which can be utilized for better purposes.

So this project is to create an Organic Processing Facility to create biogas which will be more cost effective, eco-friendly, cut down on landfill waste and portable. Overall by creating a biogas reactor on campus in the backyard of our hostels where all the kitchen wastes can be put to produce biogas. Also, in this project we are analyzing the biogas production rate for different ratios of kitchen wastes to cow dung.