PSNA COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

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PRODUCTION OF BIOGAS AND ITS BENEFITS IN THE TRANSITION TO RENEWABLE ENERGY

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ABSTRACT

- Biogas is typically a gas produced by the anaerobic digestion of biodegradable materials.
- One of the most promising processes for the energetic transformation of waste is the anaerobic digestion of waste to produce biogas.
- Food waste, which has become one of global concerns because of its massive amount, contains high organic content, which is used by the microbes as nutrients.
- The present project aims at production of biogas using food waste generated from PSNACET hostel. Our institution has three hostels and three messes, cooking food for more than 700 students and there is large quantity of food waste generated daily.
- The option available for the management of this huge waste is animal feed. So this large quantity of food waste generated should be utilized for better purposes.
- A survey is carried out and it was found that average food waste generated per person is 243g. Th set up consists of a digester which is of 2.75 litres capacity and it was filled with 2/3rd of its capacity with mixed food waste and cow dung in 1: 1 proportion.
- The initial and final characteristics of the feedstock, such as pH, total solids, volatile solids, C/N ratio and COD are analyzed. The volumetric yield of biogas is noted at regular intervals using water displacement method. The cumulative quantity of biogas produced for 10 days is 189 cm pe 300 gram of feedstock.