



BIOFUEL PARK

Biofuel Park was established in 2012 at Center for Energy Systems. The main objective of the park was to grow algae for biofuels production. Horizontal and vertical type photo-bioreactors were designed in collaboration with NRG Biofuels of Canada.

Later on expanding the experimental span for the biofuel's production semi-continuous experiments were designed to perform the anaerobic digestion of the poultry manure under an applied funded research project by USAID. The said reactors can also be utilized for the fermentation of ethanol production and also for biodiesel production.

The research in the Biofuel Park will be concerned with questions related to industrial applications based on optimization of the different processes involved in biofuel industry.

LAB MISSION

To solve issues and challenges faced by the biofuel and energy sector.

RESEARCH PORTFOLIO

- Anaerobic Digestion
- Ethanol Fermentation
- Biodiesel Lab Scale Preparation
- Biofuel Optimization



RESEARCH EQUIPMENT

Equipment	Description	Specification
Semi-continuous stirring tank reactor	To perform anaerobic digestion of the animal manure and agricultural crop residue with controlled conditions	Self-designed lab scale fabricated Semi-continuous stirring tank reactor having 10 liter working volume equipped with analogous stirrers and time controller for smooth operations
Two Phase Anaerobic digester	Conversion of Fruit and Vegetable waste to biomethane	Two phase Anaerobic digester along with Mixer and crusher. Working Volume 60 Liter with an automated control unit for temperature and stirring. Gives 68% Methane.
Horizontal Tubular Photobio Reactor	Photobio Reactors systems offer better control of contamination and cell physiology than open systems, leading to higher growth and quality of the algae product.	It has a capacity of 200 L. It also provides the illumination and degassing functionalities. CO2 Injection System is also available.

