

# Effect Of Sparger Design On The Hydrodynamics Of Anaerobic Digester Mixed By Gas Recirculation Using Advanced Measurement Techniques.



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**March 5-10, 2006**

**Tomar, Portugal**



**DOE Fund Number: DE-FC36-01GO11054**

# Poster Summary

## Problem

- More than one billion tons of animal waste is generated every year in the USA. Methane, which is emitted from it, causes Green House gas effect that estimated to be 22 times more than that of carbon dioxide. This methane can be used as bioenergy source.

## Solution

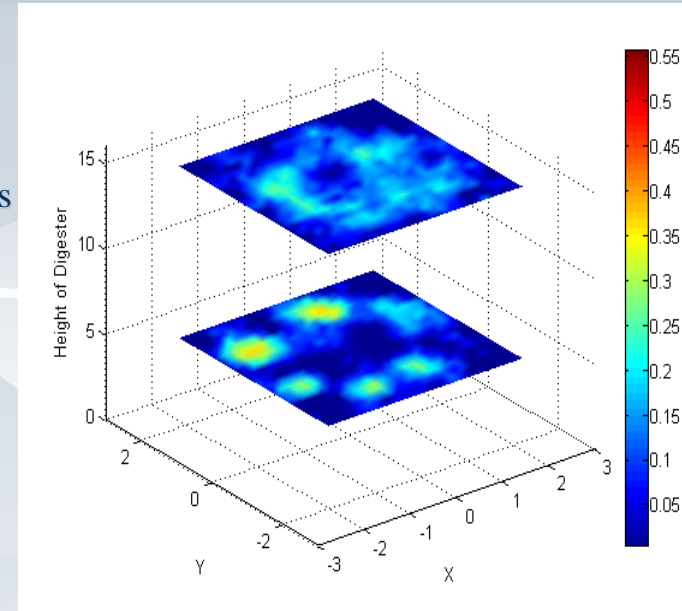
- Anaerobic digestion of animal waste to produce methane for energy and Bio-Fertilizer.

## Requirements

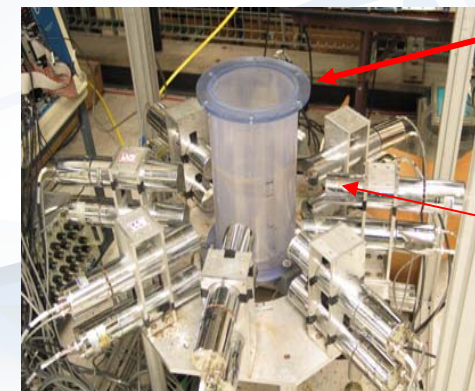
- A need to understand Mixing and hydrodynamics of anaerobic bio-digesters to improve methane yields
- Proper scale up and design of anaerobic digesters

## Methodology

- Implementing advanced non-invasive measurement techniques such as Computed Tomography (CT) and Computer Automated Radioactive particle tracking (CARPT)
- Investigating the effect of design parameters and operating variables on biodigester hydrodynamics and performance
- Optimizing the studied parameters and variables for enhancing the mixing and energy efficiency



CT results of Gas Hold up Distribution



Biodigester

Detector Array

CAPRT Set up

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I look forward to your comments and suggestions