Shri Vithal Education & Research Institute's
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Ref.:- Date:-

# 7.1.3
# Facilities in the Institution for Waste Management

## INDEX

# Solid Waste Management



**Solid (Metal Scrap) Waste Collection**



**Solid waste management (Food waste and solid waste management)**

# Dry and Wet Waste Management



**Dry and Wet Waste Collection**


**Collection of Dry and Wet Waste**

| | | |
|---|---|---|
| DRY&WET WASTE<br>SVERI | You Tube Link-:<br>https://youtu.be/OTbEVbuYfFM | |

# Dry and Wet Waste Management


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| DRY&WET WASTE DUMPING-SVERI | You Tube Link-: https://youtu.be/ExWdzbN1ufo | |

# Research Paper on Biogas Digester

## Design optimization of biogas digester for performance improvement and fault minimization

Vidyarani S. Kshirsagar & **Prashant M. Pawar**

**Link for paper:** https://doi.org/10.1080/21622515.2018.1466915

Check for updates

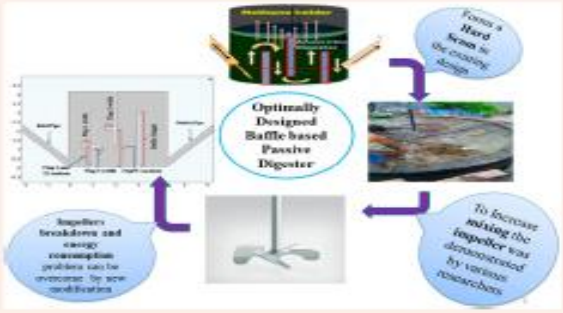
## Design optimization of biogas digester for performance improvement and fault minimization

Vidyarani S. Kshirsagar and Prashant M. Pawar

Department of Civil Engineering, SVERI's College of Engineering, Solapur, India

**ABSTRACT**

The efficiency and fault tolerance of biogas plant depends on the proper mixing of the sludge in the digester. The quality of mixing can be numerically evaluated based on the velocity profile in the digester. Most of the earlier studies have been focused on improving these velocity patterns with the help of impellers, which requires extra energy to drive them. The current study explores a passive approach for improving velocity pattern by providing the static flaps of optimal sizes at optimal locations. The design optimization problem is formulated to maximize the surface and domain velocities in the digester by varying the geometries and locations of flaps. Sufficient surface velocity gives an advantage by preventing the process of scum formation whereas the improved domain velocity improves gas production rate by improving contact between biomass flocks and the substrate. This concept is demonstrated through the numerical results obtained using CFD and optimization tools of COMSOL Multiphysics software.




**ARTICLE HISTORY**
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**KEYWORDS**
Biogas; computational fluid dynamics (CFD); design modification; mixing; optimization; scum

### 1. Introduction

Biogas production through anaerobic digestion (AD) process gives methane with relatively good calorific value using simplistic design and processes which make it an attractive source of clean energy [1]. Performance reliability is a major hurdle in making biogas plants popular for domestic applications. The performance reliability of these plants depends on the size of the plant, basic design, operating conditions, type of feed, water to feed ratio etc. This reliability can be improved by minimizing the faults in various subsystems of the biogas plant. These faults can be grouped as faults of various sub-systems viz. structural components, piping, biogas utilization, effluent disposal and biogas production [2]. Amongst these faults of various subsystems, the faults in biogas production system are critical as it takes almost 2-3 months for reestablishing this process after repairing these faults. Two major causes of the failure of biogas production system are thick scum formation and breakdown of anaerobic digestion system [2]. Both these faults are due to improper mixing of biomass and substrate. The effect of the mixing modes on biogas production rate is examined by several researchers [3–5]. Hoffmann et al. [6] has noted

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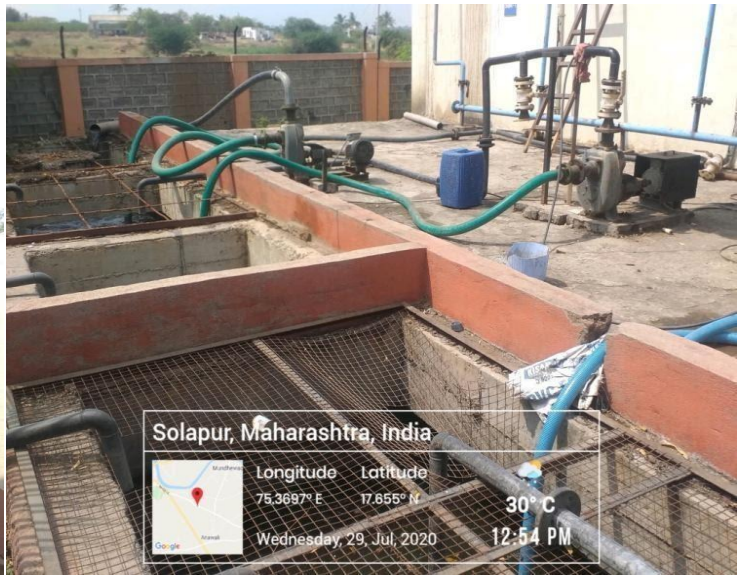
# Liquid Waste Management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|---|---|---|
| LIQUID WASTE MANAGEMENT- SEWAGE TREATMENT PLANT | You Tube Link-: https://youtu.be/PHMqFxIIjZE | |

# E- Waste Management

## MOU: SVERI's COE Pandharpur and Green Tech Solution Industries, Pandharpur

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Ref.:-

Date:- 06/09/2019

**AGREEMENT FOR DISPOSAL OF E-WASTE**

This Agreement is executed to comply with SVERI's College of Engineering, Pandharpur under E Waste Rules.

It is hereby agreed that the E-Waste Generated at the following dealership facility from products of SVERI's College of Engineering, Pandharpur Will be collected, segregated, Transported and Disposed through the authorized channel as mentioned below.

Details of Authorized channel:

**M/S. Green Tech Solution Industries**

Gat No.83/1,A/P. Wakhari, Tal. Pandharpur, Dist. Solapur 413304.Maharashtra.
Registration No.and Issue Date:-MPCB/RO(HQ)/HSMD/Author/18/H&OW-409dt:22/01/2018
Validity of Registration:-31/12/2022
Contact Number-9096084671
E-mail Address: -gtsgroup.pune@gmail.com

We further declare to through this agreement that we will dispose the e-waste as per the standard prescribed in e-waste management rules and I will be the solely responsible for non-compliance arises due to improper handling or management of e-waste collected from dealership.

B. Ronge

SVERI's College of Engineering, Pandharpur
Dr.B.P.Ronge
Principal

COLLEGE OF ENGINEERING PANDHARPUR

M/S. Green Tech Solution Industries, Pandharpur
Mr.Suryakant Ramchandra Jagtap
Director

Green Tech Solution Industries Wakhari

# Certificate of E- Waste Recycling

| | |
|---|---|
| Certificates No | 2019-04 Date: 11/12/2019 |
| Date of Receipt | 07/12/2019 |
| Weight | 40Kgs |
| Customer Reference No | By Email Communications |

Green Tech Solution Industries Wakhari

Reduce Reuse Recycle

## CERTIFICATE OF E-WASTE RECYCLING

**This is to certify that e-waste received for recycling**
**From**

## SVERI's College of Engineering, Pandharpur

located at P.B No 54 Gopalpur-Ranjani Road, Gopalpur
Tal.: Pandharpur Dist.: Solapur
Pin Code : 413304. Maharashtra state

**has been safely disposed at our registered facility in an environment friendly manner.**

Green Tech Solution Industries Wakhari

**Mr.Suryakant Ramchandra Jagtap**
**(Director)**
**M/S. Green Tech Solution Industries, Pandharpur**

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Gat No.83/1,A/P. Wakhari, Tal. Pandharpur, Dist. Solapur 413304.Maharashtra.
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# Chemical Waste Management