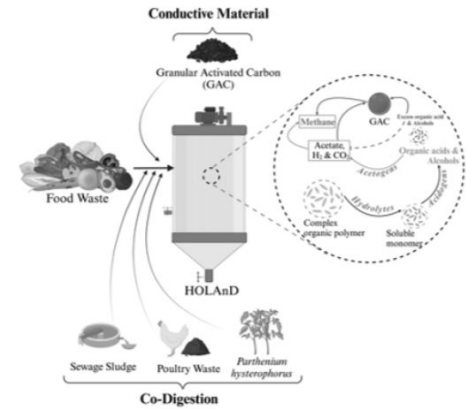


PENDING**(IN202411072287)**

A high organic loaded anaerobic digestion (HOLAnD) system and method for bio-methanation of food waste



NEED

Food waste management is a critical challenge worldwide, with billions of tons of waste generated annually. Current anaerobic digestion methods struggle with high organic loads, leading to inefficiencies in biogas production and waste reduction.

TECHNOLOGY OVERVIEW

This patent discloses a high organic-loaded anaerobic digestion (HOLAnD) system that enhances biogas production from food waste by optimizing microbial activity through conductive materials like GAC, carbon nanotubes, and graphene. The system operates under mesophilic conditions to maximize methane yield.

TECHNOLOGY KEY FEATURES

High organic loading rate (OLR), use of conductive materials (GAC, CNTs, graphene), optimized anaerobic reactor design, controlled mass transfer, enhanced microbial activity, increased methane yield, reduced sludge production, efficient biogas recovery.

[Read more here](#)

MARKET ANALYSIS

The global anaerobic digestion market is expected to grow at a CAGR of 7.4% from 2023 to 2033, driven by the increasing need for sustainable waste management and renewable energy production. (Source: Market Research Future, 2023)

Target Industries

1) Bioenergy producers; 2) Food waste management companies; 3) Municipal waste-to-energy facilities; 4) Enterprises focusing on waste-to-biogas conversion technology.

AT A GLANCE

- SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action)

Technology is available for licensing/ co-development.

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