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## NIIST develops compact digester for biomass wastes

Our Bureau

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National Institute for Interdisciplinary Science and Technology (NIIST) here has developed a compact digester for treating biomass wastes at origin.

NIIST is a constituent laboratory under the Council of Science and Industrial Research (CSIR).

The digester doesn't cause environmental pollution but recovers biogas. It also converts biomass wastes to compost slurry with a higher content of stable solids.

### SOIL MANURE

The stabilised compost slurry from this biogas plant is excellent soil manure for agriculture applications.

A digester of 350-litre volume is sufficient to treat around three kilograms of wastes a day. It produces 250 to 600 litres of methane-rich biogas daily.

The biogas produced can be conveniently stored in biogas balloons, waste tubes or in the digester itself.

The principle of anaerobic digestion is applied for the stabilisation of household wastes.

Anaerobic digestion is a process for the treatment of biodegradable biomass and the recovery of biogas.

### NO WATER NEEDED

Biodegradable wastes such as spoiled food, crop biomass, animal wastes, mixture of plant and animal wastes, garbage and agriculture wastes can be treated.

There is no need of adding water or wastewater. Hard waste materials are fed through the attached crusher.

The central axis of the crusher is rotated by hand for a few times to enable its thorough mixing with other biomass wastes.

The wastes loaded through the inlet port travels for more than 200 days in the digester before reaching the outlet.

### HORIZONTAL DESIGN

The horizontal design of the digester facilitates the slow movement of wastes, thereby enabling decomposition of large-sized waste.

The digested discharge from the outlet is thick slurry free from acidic foul smell unlike the discharge from widely used household biogas plants.

The discharged slurry can be easily collected and stored conveniently for direct soil applications upon requirement.

This anaerobic digester controls environmental pollution and avoids mosquito breeding.

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Keywords: [National Institute for Interdisciplinary Science and Technology](#), [digester](#), [biomass wastes](#), [Council of Science and Industrial Research](#)

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