

## Technical Information Sheet

<b>1. Name of technology</b>	Methane fermentation technology for raw garbage, food residue, sludge, and other types of waste (Bio cycle Treatment and Co-generation system)
<b>2. Type of technology</b>	<ul style="list-style-type: none"> <li>Wet solid methane fermentation system for biomass such as raw garbage, food residue, and sludge</li> <li>This system is a custom-made system for which the pretreatment temperature and optimal fermentation temperature (mid- and high-temperature), retention time (16 to 20 days or so), and other parameters are set according to the raw material.</li> </ul>
<b>3. Description of technology</b>	<div style="text-align: center;"> </div> <p><b>[Objective and application of the technology]</b></p> <ul style="list-style-type: none"> <li>This system treats high-concentration organic waste that can be fermented to produce methane, such as raw garbage, food residue, sewage sludge, and livestock excreta. One or more types of such waste are anaerobically fermented to collect methane, and the digestive sludge is used as dry fuel and compost.</li> <li>The collected methane gas is used as a heat source or is converted to electric power, for establishing an energy independent system.</li> </ul> <p><b>[Characteristics of the technology]</b></p> <ul style="list-style-type: none"> <li>The above flow is an example application of this system that enables the optimal design of energy and cost performance in the utilization of raw materials, bio gas, and digestive fluid.</li> <li>Foreign materials in the raw material are removed before fermentation to prevent the formation of scum in the methane fermentation tank.</li> <li>Two or more types of organic waste can be treated at the same time.</li> </ul> <p><b>[Delivery record]</b></p> <ul style="list-style-type: none"> <li>Kikunotsuyu Shuzo Co., Ltd.: Distillation lees (Awamori) 15 tons per day, from Apr. 2008</li> <li>Joetsu Biomass Circulation: Raw garbage (40 tons per day), sludge, scrap wood, from Apr. 2009</li> <li>Sewage biomass utilization project by Kurobe City: Sewage sludge + Food residue (coffee lees), from May 2011, among others</li> </ul> <p><b>[Price and other inquiries]</b> Please contact the office and person in charge below.</p>
<b>4. Classification of technology</b>	
(1) Applicable fields	Municipal solid waste treatment, Industrial waste treatment, Recycling
(2) Target waste	Food waste/raw garbage, Other (sewage sludge, sludge from food factories)
(3) Services provided	Plant construction, Sales of machinery and equipment, Technical cooperation/licensing, Consulting

<b>5. Countries to which this technology can be provided</b>	All countries including China and Southeast Asian countries (no restrictions as long as there are no security issues)
<b>6. Keywords</b>	Biomass, raw garbage, food, bio gas, methane fermentation, sludge, fertilizer, digestion, energy recovery
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