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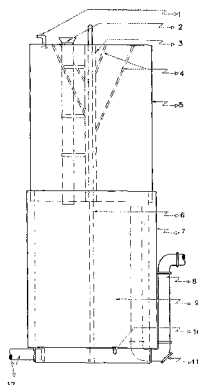
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(54) Title: IMPROVED BIO-DEGRADABLE WASTE BASED BIO-METHANATION PLANT

Fig. 1



(57) Abstract: A biogas producing apparatus comprising a gas holder drum (5), a digester (9) and comprising at least one of the features selected from the group of: (a) the said gas holder drum having scum breakers which may be any structural feature attached on one end to the guide pipe (3) and to the other end of the inner wall of the gas holder drum (5), (b) the said gas holder drum having a central pipe (a guide pipe), (c) an inlet pipe (2) that is integrated with the gas holder, (d) that may be attached to the central pipe, (e) a built in structural design feature of the said gas holder that provides scum breakers (4) that break up the floating scum and stirs the fermenting input organic matter with the movement of the gas holder up and down, as well as controlled rotational movement, (f) providing draining of digested slurry through an arrangement of outlet pipe (8) such that the pipe originates inside the digester tank near the upper end, (g) pipe (8) is provided at its bottom with an emergency slurry drain (11), (h) providing an outlet water drain (10) which connects to the water jacket, (i) providing a substrate drain (12) for emptying the contents of the digester whenever required, (j) providing a water jacket (7) to prevent the organic waste in digester from getting exposed to open atmosphere, preventing leakage of gas to atmosphere and for thermally insulating the digester.



# INTERNATIONAL SEARCH REPORT

International application No.  
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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> Int. Cl. <i>C12M 1/107</i> (2006.01) <i>C02F 11/04</i> (2006.01) <i>C12M 1/113</i> (2006.01) <i>B09B 3/00</i> (2006.01) <i>C10L 3/06</i> (2006.01) <i>C12P 5/02</i> (2006.01)		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) <b>WPI, EPODOC:</b> C12M1/107/IC/EC OR C12M1/113/IC/EC OR C02F11/04/IC/EC OR C10L3/06/IC/EC OR B09B3/00/IC/EC OR C12P5/02/IC/EC; ANAEROB+ OR BIO_GAS+ OR COMPOST+ OR BIO_METHANAT+ OR DECOMPOS+; DIGEST+; GAS+ OR METHAN+ OR CH4; DRUM? OR TANK? OR VESSEL? OR BARREL? <b>GOOGLE PATENTS, ESP@CENET, INTERNET KEYWORD SEARCH:</b> digest or digester or digestion; C12M; anaerobic; biogas or methane or CH4; drum or tank or vessel or barrel; and similar keywords.		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
<b>P, X</b>	US 2010/0105128 A1 (REZIN) 29 April 2010. See abstract; figures 1, 2; paragraphs [0001], [0003], [0008]- [0011], [0013]- [0016], [0019]-[0021], [0024]-[0032], [0034]- [0036], [0044], and [0054]; and claims.	<b>1- 7, 9, 11</b>
<b>X</b>	WO 2008/026221 A1 (COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH [IN]) 6 March 2008. See abstract; page 1, lines 5- 10; page 4, line 26- page 11, line 12; page 11, line 26- page 12, line 15; example 1; page 19, lines 3- 23; and claims.	<b>1, 3- 11</b>
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Date of the actual completion of the international search 02 March 2011	Date of mailing of the international search report <b>04 MAR 2011</b>	
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International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
<b>X</b>	<p>US 6299774 B1 (AINSWORTH et al.) 9 October 2001. See abstract; figures 1a, 1b, and 2; column 1, lines 3- 20; column 2, line 10- column 3, line 46; column 3, line 61- column 5, line 13; column 4, lines 33- 42; column 6, lines 4- 30 and 40- 57; column 7, line 56- column 8, line 11; column 8, line 54- column 9, line 7; column 9, line 37- column 10, line 22; column 10, lines 41- 65; column 11, line 29- column 12, line 4; and claims.</p>	<b>1, 2, 11</b>
<b>X</b>	<p>PATENT ABSTRACTS OF JAPAN, JP 57-127499 A (TAKUMA SOGO KENKYUSHO:KK) 7 August 1982. See whole abstract.</p>	<b>1, 11</b>
<b>X</b>	<p>KR 100646076 B (BIOELEX CO. LTD. et al.) 13 November 2006. English abstract retrieved from EPODOC database. See abstract.</p>	<b>1, 11</b>
<b>A</b>	<p>KR 100883675 B (ECHO SERVICE ENG.) 18 February 2009. English abstract retrieved from EPODOC database. See abstract.</p>	
<b>A</b>	<p>BE 893015 A (AMATUCCIA) 16 August 1982. English abstract retrieved from EPODOC database. See abstract.</p>	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

**PCT/IN2010/000449**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member
US 2010105128	NONE
WO 2008026221	NONE
US 6299774	CA 2461395 EP 1446358 IL 161031 US 2002079266 US 6569332 WO 03042117
JP 57127499	NONE
KR 100646076	NONE
KR 100883675	NONE
BE 893015	NONE

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

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