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(54) Title: CONTROLLED BIOSECURE AQUATIC FARMING SYSTEM IN A CONFINED ENVIRONMENT

(57) Abstract: The present invention relates generally to a controlled farming system for energy efficient farming in a confined space that is monitored and controlled by a hard and soft sensing system whereby the controlled farming system comprises reactors and storage containers, which are interconnected and/or are communicating with the confined space, which comprises the farming system. In particular embodiment the energy, biomass and molecule flows in the internal environment of the reactors, the storage containers and the confined space comprising the reactors and storage containers are controlled for energy efficient farming of aquatic organisms and crops and the minimal waste of energy and material in the external environment. More particularly the present invention concerns a system and method for farming of crops and aquatic animals with improved control of the systems components for optimal use of the biomass and energy input and less energy and biomass waste output. The system comprises a bacterial bioreactor to treat the sludge separated from culture water to produce biogas.

# INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A01K C02F

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 practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>D. LANARI, C. FRANCI: "Biogas production from solid wastes removed from fish farm effluents", AQUAT. LIVING RESOURC., vol. 11, no. 4, July 1998 (1998-07), pages 289-295, XP002635539, page 290 - page 291 page 294</p> <p>-----</p> <p>EP 0 865 729 A1 (JIFAS CORP [JP]; HITACHI METALS LTD [JP]) 23 September 1998 (1998-09-23) column 7, line 34 - column 8, line 15 column 13, line 51 - column 14, line 5 figure 1</p> <p>-----</p> <p>-/-</p>	1-48
Y		1-3,5-7, 13-21, 30,33-48

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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- "P" document published prior to the international filing date but later than the priority date claimed

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International application No PCT/BE2010/000044
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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.
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A	MIRZOYAN ET AL.: "Quality of brackfish aquaculture sludge and its suitability for anaerobic digestion and methne production in an upflow anaerobic sludge blanket (UASB) reactor", AQUACULTURE, vol. 279, 2008, pages 35-41, XP002635540, the whole document -----	1-48
A	R. GEBAUER: "Mesophilic anaerobic treatment of sludge from saline fish farm effluents with biogas production", BIORESOURCE TECHNOLOGY, vol. 93, 2004, pages 155-167, XP002635541, the whole document -----	1-48
A	WO 2009/046417 A1 (UNIV COLUMBIA [US]; CHANDRAN KARTIK [US]; CHANG TIMOTHY [US]) 9 April 2009 (2009-04-09) claims 1-20; figures 1,2 -----	1-48

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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