

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

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Date of mailing (day/month/year) 12 SEPTEMBER 2012 (12.09.2012)

Applicant's or agent's file reference 50665-00003	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/US2012/024555	International filing date (day/month/year) 09 FEBRUARY 2012 (09.02.2012)	Priority date(day/month/year) 09 FEBRUARY 2011 (09.02.2011)
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International Patent Classification (IPC) or both national classification and IPC <i>B09B 3/00(2006.01)i, F23G 5/027(2006.01)i, C10L 3/00(2006.01)i</i>
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Applicant DENVER ZOOLOGICAL FOUNDATION, INC. et al
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1. This opinion contains indications relating to the following items:
- Box No. I Basis of the opinion
 - Box No. II Priority
 - Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - Box No. IV Lack of unity of invention
 - Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - Box No. VI Certain documents cited
 - Box No. VII Certain defects in the international application
 - Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

 Name and mailing address of the ISA/KR Korean Intellectual Property Office 189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Date of completion of this opinion 11 SEPTEMBER 2012 (11.09.2012)	Authorized officer HONG Sung Chul Telephone No.82-42-481-8396	

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2012/024555

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :
 - the international application in the language in which it was filed
 - a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:
 - a. a sequence listing filed or furnished
 - on paper
 - in electronic form
 - b. time of filing or furnishing
 - contained in the international application as filed.
 - filed together with the international application in electronic form.
 - furnished subsequently to this Authority for the purposes of search.
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2012/024555

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-23</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>NONE</u>	YES
	Claims	<u>1-23</u>	NO
Industrial applicability (IA)	Claims	<u>1-23</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

Reference is made to the following documents:

- D1: US 2007-0100502 A1 (JOHN RENNIE et al.) 03 May 2007
D2: JP 2008-249214 A (KOBE STEEL LTD) 16 October 2008

1. Novelty and Inventive Step

1.1 Independent claims 1 and 19

1.1.1 Claim 1

Claim 1 relates to a method for use in a system for converting waste from a content varying, heterogeneous waste stream into useable energy, said system involving processing of said waste stream to produce a fuel and processing of said feedstock fuel to generate energy, said method comprising the steps of: (A) monitoring said waste stream over time to develop a model of a composition of the waste stream with respect to at least one of time and source location of the waste stream; and (B) controlling one or more of the parameter values.

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a method of controlling a multiple-fuel steam production system, comprising: (A) obtaining a plurality of input values associated with producing steam; using a model predictive controller to determine a first value associated with predicting an amount of first fuel to produce an amount of steam; using the model predictive controller to determine a second value associated with predicting an amount of second fuel to produce the amount of steam; and (B) controlling fuel feed rates of the first and second fuels based on the first and second values (see the abstract and claim 1).

Claim 1 differs from D1 in the use of a model of a composition of the waste with respect to "time".

However, said feature is virtually suggested by D1 considering that the fossil fuel and the alternative fuel (such as wood waste) are supplied respectively, at different speed that varies over time (see paragraphs [0024]-[0028]).

Accordingly, claim 1 would have been obvious over D1.

Therefore, claim 1 lacks an inventive step under PCT Article 33(3).

(Continued on Supplemental Box)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

Box V

1.1.2 Claim 19

Claim 19 adopts the similar subject matter as claim 1, although their categories of invention are different.

Therefore, claim 19 lacks an inventive step under PCT Article 33(3).

1.2 Dependent Claims

1.2.1 Claims 2-5 and 20-23

The additional features of claims 2-5 and 20-23 are slight changes in model data or parameters used in D1.

For example, D1 discloses the model data or parameters such as steam flow values, a particular level of energy, and fuel feed rates (see paragraphs [0036]-[0038]).

Therefore, claims 2-5 and 20-23 lack an inventive step under PCT Article 33(3).

1.2.2 Claims 6-9

The additional features of claims 6-9 are virtually suggested by D1 considering that more than 3 types of fuel including wood waste or shredded tires are used (see paragraphs [0024]-[0025]).

Therefore, claims 6-9 lack an inventive step under PCT Article 33(3).

1.2.3 Claims 10-18

Claims 10-18 differ from D1 in the use of a drying process, pyrolysis, or a reactor process.

However, it is well known from D2, which discloses a control method for an incinerator, including a drying process and pyrolysis process (see the abstract, claim 1, and paragraphs [0076]-[0078]).

Accordingly, claims 10-18 would have been obvious over D1 in view of D2.

Therefore, claims 10-18 lack an inventive step under PCT Article 33(3).

2. Industrial Applicability

Claims 1-23 are industrially applicable under PCT Article 33(4).