

**PATENT COOPERATION TREATY**

**TRANSLATION**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

|                                     |                   |
|-------------------------------------|-------------------|
| Date of mailing<br>(day/month/year) | <b>28.05.2013</b> |
|-------------------------------------|-------------------|

Applicant's or agent's file reference  
**P643221P0**

**FOR FURTHER ACTION**  
See paragraph 2 below

|   |   |   |
|---|---|---|
| International application No.<br><b>PCT/JP2013/001277</b> | International filing date (day/month/year)<br><b>01.03.2013</b> | Priority date (day/month/year)<br><b>10.04.2012</b> |
|---|---|---|

International Patent Classification (IPC) or both national classification and IPC  
**C01B3/34 (2006.01) i, H01M8/04 (2006.01) i, H01M8/06 (2006.01) i**

Applicant  
**PANASONIC CORPORATION**

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/JP | Date of completion of this opinion | Authorized officer |
| Facsimile No.                          |                                    | Telephone No.      |

WRITTEN OPINION OF THE  
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International application No.

PCT/JP2013/001277

Box No. I 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 43*bis*.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 sequence listing filed or furnished:
  - a. (means)
    - on paper
    - in electronic form
  - b. (time)
    - in the international application as filed
    - together with the international application in electronic form
    - 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  
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|--|
| International application No.<br>PCT/JP2013/001277 |
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|                  |   |
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| <b>Box No. V</b> | <b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b> |
|------------------|---|

|                               |  |                    |     |
|-------------------------------|--|--------------------|-----|
| 1. Statement                  |  |                    |     |
| Novelty (N)                   |  | Claims <u>1-11</u> | YES |
|                               |  | Claims _____       | NO  |
| Inventive step (IS)           |  | Claims <u>1-11</u> | YES |
|                               |  | Claims _____       | NO  |
| Industrial applicability (IA) |  | Claims <u>1-11</u> | YES |
|                               |  | Claims _____       | NO  |

|                                |  |
|--------------------------------|--|
| 2. Citations and explanations: |  |
|--------------------------------|--|

Document 1: JP 2010-195623 A (PANASONIC CORP.) 09  
September 2010, entire text

Document 2: JP 2007-126330 A (T. RAD CO., LTD.) 24 May  
2007, entire text

Document 3: JP 2010-280756 A (TOSHIBA CORP.) 16  
December 2010, entire text

Document 4: JP 2008-016340 A (NIPPON OIL CORP.) 24  
January 2008, entire text

Document 5: JP 2000-095504 A (MATSUSHITA ELECTRIC  
WORKS, LTD.) 04 April 2000, entire text

Document 6: JP 2007-055868 A (FUJI ELECTRIC HOLDINGS  
CO., LTD.) 08 March 2007, entire text

Document 7: JP 2010-058995 A (TOKYO GAS CO., LTD.) 18  
March 2010, entire text

The invention as in claims 1-11 is not described in any of the documents cited in the ISR, and could not be easily conceived of by a person skilled in the art.

None of the documents describes a method for operating a hydrogen generation device, wherein a hydro-desulfurization unit that is to be heated by heat

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**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

transfer from a hydrogen generator is controlled in such a manner that the operation of feeding a raw material to the hydrogen generator after a halt on the generation of a hydrogen-containing gas in the hydrogen generator is not carried out unless the hydro-desulfurization unit has a temperature at which the deposition of carbon from the raw material is suppressed.

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**Box No. VIII**      **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Although claim 11 contains the wording the "aforementioned operation", an "operation" corresponding thereto is not written prior to the wording. Thus, the invention as in claim 11 is inconsistent, and therefore is not clear.

In addition, in Box V, the opinion about novelty and an inventive step was established on the assumption that the invention as in claim 11 cites claim 10.