

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

|   |   |   |                  |
|---|---|---|------------------|
| Applicant's or agent's file reference<br><b>PCT17106</b>  | <b>FOR FURTHER ACTION</b>   |   | See item 4 below |
| International application No.<br><b>PCT/JP2017/030287</b>   | International filing date ( <i>day/month/year</i> )<br><b>24 August 2017 (24.08.2017)</b> | Priority date ( <i>day/month/year</i> )<br><b>30 August 2016 (30.08.2016)</b> |                  |
| International Patent Classification (8th edition unless older edition indicated)<br><b>See relevant information in Form PCT/ISA/237</b> |   |   |                  |
| Applicant<br><b>UACJ CORPORATION</b>  |   |   |                  |

|   |                                     |   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
|---|-------------------------------------|---|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>   |                                     |   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p> | <input checked="" type="checkbox"/> | Box No. I   | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/>   | Box No. I                           | Basis of the report   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. II                          | Priority  |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. III                         | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. IV                          | Lack of unity of invention  |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input checked="" type="checkbox"/>   | Box No. V                           | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. VI                          | Certain documents cited   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. VII                         | Certain defects in the international application  |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>  | Box No. VIII                        | Certain observations on the international application   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |

|   |  |
|---|--|
|   | Date of issuance of this report<br><b>05 March 2019 (05.03.2019)</b> |
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland | Authorized officer<br><br><b>Mineko Mohri</b>                        |
| Facsimile No. +41 22 338 82 70  | e-mail: pct.team8@wipo.int   |

**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>28.11.2017</b> |
|-------------------------------------|-------------------|

|  |  |
|--|--|
| Applicant's or agent's file reference<br><b>PCT17106</b> | <b>FOR FURTHER ACTION</b><br>See paragraph 2 below |
|--|--|

|   |   |   |
|---|---|---|
| International application No.<br><b>PCT/JP2017/030287</b> | International filing date (day/month/year)<br><b>24.08.2017</b> | Priority date (day/month/year)<br><b>30.08.2016</b> |
|---|---|---|

International Patent Classification (IPC) or both national classification and IPC  
C22C21/00(2006.01)i, B23K1/00(2006.01)i, B23K1/19(2006.01)i,  
B23K31/02(2006.01)i, B23K35/22(2006.01)i, B23K35/28(2006.01)i,  
B23K101/14(2006.01)n, B23K103/10(2006.01)n, C22F1/00(2006.01)n,

Applicant  
**UACJ 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  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2017/030287

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 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 sequence listing:
  - a.  forming part of the international application as filed:
    - in the form of an Annex C/ST.25 text file.
    - on paper or in the form of an image file.
  - b.  furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
  - c.  furnished subsequent to the international filing date for the purposes of international search only:
    - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
    - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
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 forming part of 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**

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|--|
| International application No.<br>PCT/JP2017/030287 |
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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)                   |           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;">1-4, 6-10</td> <td style="width: 10%; padding: 2px;">YES</td> </tr> <tr> <td style="padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;">5</td> <td style="padding: 2px;">NO</td> </tr> </table>      | Claims | 1-4, 6-10 | YES | Claims | 5         | NO |  |
| Claims                        | 1-4, 6-10 | YES  |        |           |     |        |           |    |  |
| Claims                        | 5         | NO   |        |           |     |        |           |    |  |
| Inventive step (IS)           |           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;">1-4, 7</td> <td style="width: 10%; padding: 2px;">YES</td> </tr> <tr> <td style="padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;">5-6, 8-10</td> <td style="padding: 2px;">NO</td> </tr> </table> | Claims | 1-4, 7    | YES | Claims | 5-6, 8-10 | NO |  |
| Claims                        | 1-4, 7    | YES  |        |           |     |        |           |    |  |
| Claims                        | 5-6, 8-10 | NO   |        |           |     |        |           |    |  |
| Industrial applicability (IA) |           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;">1-10</td> <td style="width: 10%; padding: 2px;">YES</td> </tr> <tr> <td style="padding: 2px;">Claims</td> <td style="border-bottom: 1px solid black; padding: 2px;"></td> <td style="padding: 2px;">NO</td> </tr> </table>            | Claims | 1-10      | YES | Claims |           | NO |  |
| Claims                        | 1-10      | YES  |        |           |     |        |           |    |  |
| Claims                        |           | NO   |        |           |     |        |           |    |  |

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

Document 1: JP 2015-528852 A (GRANGES SWEDEN AB) 01 October 2015, claims, paragraphs [0002], [0026]-[0047] & US 2015/0165564 A1, claims, paragraphs [0002], [0025]-[0071] & WO 2013/180630 A1 & CN 104395028 A & RU 2014153559 A

Document 2: JP 2007-152422 A (FURUKAWA-SKY ALUMINUM CORP.) 21 June 2007, claims, paragraphs [0020]-[0022] & EP 1795294 A1, claims, paragraphs [0038]-[0043] & CN 1982047 A & KR 10-2007-0061413 A

Document 3: JP 10-53828 A (DENSO CORPORATION) 24 February 1998 & US 6129143 A & EP 0823305 A2

The invention as in claim 5 is disclosed in document 1 cited in the ISR, and thus lacks novelty.

The aluminum alloy brazing sheet set forth in claim 5 is disclosed in chart 2 of document 1 (examples 6, 7). For the composition of examples 6 and 7, see chart 1.

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INTERNATIONAL SEARCHING AUTHORITY

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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

The invention as in claims 6 and 8 does not involve an inventive step in the light of document 1 cited in the ISR.

Document 1 (paragraphs [0034] and [0035]) indicates that the alloy of an intermediate layer may contain 1.0% or less of Si and 6% or less of Zn; accordingly, a person skilled in the art could easily have conceived of configuring the invention disclosed in document 1 so as to include such components in the alloy of an intermediate layer.

The invention as in claims 9-10 does not involve an inventive step in the light of documents 1 and 2 cited in the ISR.

Document 1 (claim 11) indicates that the side opposite a core may be covered with a sacrificing layer.

Document 1 does not specify the composition of a sacrificing layer; however, a sacrificing layer having a composition set forth in claims 9-10 is, as disclosed in document 2, a feature known to persons skilled in art, and a person skilled in the art could have easily conceived of adopting such a composition.

The invention as in claims 1-4 and 7 is not disclosed in any of the documents cited in the ISR and is novel. Furthermore, the invention as in claims 1-4 and 7 involves an inventive step in relation to the documents cited in the ISR.

In particular, with respect to the invention of document 1, no motivation can be found for adopting a brazing material having the composition set forth in claim 1 or making the composition of the intermediate

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2017/030287

**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**

layer the composition of claim 7.