

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 PC-18105	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2014/057473	International filing date (<i>day/month/year</i>) 19 March 2014 (19.03.2014)	Priority date (<i>day/month/year</i>)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KABUSHIKI KAISHA TOSHIBA			

<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 7 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 checked="" 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 checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 20 September 2016 (20.09.2016)
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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 (day/month/year)	10.06.2014
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Applicant's or agent's file reference PC-18105	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/JP2014/057473	International filing date (day/month/year) 19.03.2014	Priority date (day/month/year)
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International Patent Classification (IPC) or both national classification and IPC
H01M4/58 (2010.01) i, H01M2/02 (2006.01) i, H01M2/10 (2006.01) i, H01M4/485 (2010.01) i, H01M10/0566 (2010.01) i, H01M10/0587 (2010.01) i

Applicant
KABUSHIKI KAISHA TOSHIBA

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.

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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:

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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		
1. Statement			
Novelty (N)	Claims	1-13	YES
	Claims		NO
Inventive step (IS)	Claims	4-5, 8, 12	YES
	Claims	1-3, 6-7, 9-11, 13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: JP 2005-251617 A (NISSAN MOTOR CO., LTD.) 15 September 2005, paragraphs [0008]- [0047], fig. 1-6</p> <p>Document 2: JP 2013-33685 A (SHOWA DENKO KABUSHIKI KAISHA) 14 February 2013, paragraphs [0042], [0046], [0069]</p> <p>Document 3: JP 2007-48724 A (SONY CORP.) 22 February 2007, paragraphs [0031], [0083]-[0085], fig. 11, 24, 25</p> <p>Document 4: JP 2008-130360 A (SONY CORP.) 05 June 2008, paragraphs [0016], [0017], [0033], [0034]</p> <p style="margin-top: 20px;">The invention as in claims 1-3, 9-10 and 13 does not involve an inventive step in the light of documents 1 and 2 cited in the ISR. Document 1 discloses a plurality of non-aqueous electrolyte secondary cells, wherein adjacent cells are connected by positive electrode and negative electrode leads, and the connections are covered with an outer covering material comprising metal and resin layers. The positive electrode and negative electrode leads disclosed in document 1 are also formed with metal</p>			

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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

foil and can thus be folded. In addition, after the adjacent cells have been connected together, the adjacent sealing members are fused together, which is thus equivalent to the formation of an integrated sealing component. Furthermore, document 2 discloses a positive electrode containing LiFePO_4 and a negative electrode containing titanium oxide and lithium titanium oxide having a spinel and ramsdellite structure. A person skilled in the art thus could easily conceive of adopting the structures disclosed in document 2 for the positive electrode and negative electrode materials of the non-aqueous electrolyte secondary cell disclosed in document 1.

The invention as in claims 6-7 does not involve an inventive step in the light of documents 1 and 2 and document 3 cited in the ISR. Document 3 discloses an embodiment in which three non-aqueous electrolyte secondary cells are folded, and a person skilled in the art thus could easily conceive of folding the non-aqueous secondary electrolyte cells disclosed in documents 1 and 2 as disclosed in document 3 according to the shape of a housing space.

The invention as in claim 11 does not involve an inventive step in the light of documents 1-3 and document 4 cited in the ISR. Document 4 discloses a non-aqueous electrolyte secondary cell having a maximum charging voltage of 4.2 V and a mean discharge voltage of 3.7 V. A person skilled in the art thus could easily conceive of selecting the positive electrode and negative electrode materials of the non-aqueous electrolyte secondary cells

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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

disclosed in documents 1-3 so as to result in characteristics such as those disclosed in document 4.

The invention as in claims 4-5, 8 and 12 is not disclosed in any of the documents cited in the ISR, and is novel and involves an inventive step. In particular, none of the documents discloses a connection member, heat-release member, or unsealed component provided on the outer covering material.

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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:

Claims 1-3 use the two terms first and second container parts and first and second housing parts, and it is unclear whether or not these are the same things.

With regard to the expression "said first site and said second site" in claim 6, no first and second sites have been previously mentioned prior to the expression.