

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 16A249WOW1FF	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2017/005126	International filing date (<i>day/month/year</i>) 13.02.2017	Priority date (<i>day/month/year</i>) 30.03.2016
International Patent Classification (IPC) or national classification and IPC H01L51/44 (2006.01) i, C07F7/12 (2006.01) i, H01L51/48 (2006.01) i		
Applicant FUJIFILM CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. (*sent to the applicant and to the International Bureau*) a total of 8 sheets, as follows:

- sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).
- sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2).
- superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)).

b. (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing, in the form of an Annex C/ST.25 text file, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3ter of Annex C of the Administrative Instructions).

4. This report contains indications relating to the following items:

- Box No. I Basis of the report
- 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 Article 35(2) 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

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> a translation of the international application into _____, which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rules 12.3(a) and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4(a))</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2(a) and/or 55.3(a))</p>
2.	<p>With regard to the elements of the international application, this report is based on (<i>replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report</i>):</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-73</u> as originally filed/furnished.</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>Nos. _____ as originally filed/furnished.</p> <p>Nos.* _____ as amended (together with any statement) under Article 19</p> <p>Nos.* <u>1, 3, 6-16</u> received by this Authority on <u>04.10.2017</u></p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>pages <u>figures 1-7F</u> as originally filed/furnished.</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing – see Supplemental Box Relating to Sequence Listing.</p>
3.	<p><input checked="" type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input checked="" type="checkbox"/> the claims, Nos. <u>2, 4-5</u></p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p>
4.	<p><input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rule 70.2(c) and (c-bis)):</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, Nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p>
5.	<p><input type="checkbox"/> This report has been established:</p> <p><input type="checkbox"/> taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).</p> <p><input type="checkbox"/> without taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rules 66.1bis and 70.2(e)).</p>
6.	<p>With regard to top-up searches (Rules 66.1ter and 70.2(f)):</p> <p><input checked="" type="checkbox"/> A top-up search was carried out by this Authority on <u>04.01.2018</u></p> <p><input type="checkbox"/> Additional relevant documents have been discovered during the top-up search.</p> <p><input type="checkbox"/> No top-up search was carried out by this Authority because it would serve no useful purpose.</p>
7.	<p><input type="checkbox"/> Supplementary international search report(s) from Authority(ies) _____</p> <p>has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).</p> <p><i>* If item 4 applies, some or all of those sheets may be marked "superseded."</i></p>

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1, 3, 6-16	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1, 3, 6-16	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1, 3, 6-16	YES
	Claims	_____	NO
2. Citations and explanations (Rule 70.7)			
Document 1:	ZHANG, J. et al., "Bifunctional alkyl chain barriers for efficient perovskite solar cells". Chemical Communications, 12 March 2015, vol. 51, pp. 7047-7050		
Document 2:	HORANTNER, M.T. et al., "Shunt-blocking layers for semitransparent perovskite solar cells". Advanced Materials Interfaces, 22 February 2016, vol. 3, pp. 1500837-1-7		
Document 3:	CN 104576930 A (NINGBO UNIVERSITY) 29 April 2015, paragraphs [0032]-[0064]		
Document 4:	JP 2013-168583 A (TOAGOSEI CO., LTD.) 29 August 2013, paragraphs [0010]-[0020]		
Document 5:	US 2015/0380170 A1 (SHARP LABORATORIES OF AMERICA, INC.) 31 December 2015, paragraphs [0031]-[0060], fig. 3-6 & WO 2016/002213 A1		
Document 6:	JP 2014-175473 A (OSAKA GAS CO., LTD.) 22 September 2014, paragraph [0067]		
	The invention as in claims 1, 3, and 6-16 is not disclosed in any of the documents cited in the ISR, and would not be obvious to a person skilled in the art.		

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Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
WO 2016/143526 A1 [E, X]	15.09.2016	24.02.2016	06.03.2015
JP 2016-92294 A [E, A]	23.05.2016	07.11.2014	

2. Non-written disclosures (Rule 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>
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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:

The invention as in claims 12-16 is a "surface treatment agent", a "surface treatment composition", and a "surface treatment liquid", and the object to be subjected to surface treatment is not specified. However, the only object to be subjected to surface treatment actually disclosed in the description of the present application is a light absorption layer comprising an organic-inorganic hybrid perovskite compound. The surface treatment of other objects is thus not fully supported by the description.

Consequently, when examining the invention as in claims 12-16, examination was limited to embodiments in which a light absorption layer comprising an organic-inorganic hybrid perovskite compound is subjected to surface treatment.