

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

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| Applicant's or agent's file reference PP151690-15 | FOR FURTHER ACTION | | See item 4 below |
| International application No. PCT/IB2015/058632 | International filing date (<i>day/month/year</i>) 09 November 2015 (09.11.2015) | Priority date (<i>day/month/year</i>) 29 June 2015 (29.06.2015) | |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | | |
| Applicant UNIVERSIDADE DE TRÁS-OS-MONTES E ALTO DOURO | | | |

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|---|-------------------------------------|---|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <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 | | | | | | | | | | | | | | | | | | | | | | |

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| | Date of issuance of this report 02 January 2018 (02.01.2018) |
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**
(PCT Rule 43*bis*.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2015/058632

International filing date (day/month/year)
09.11.2015

Priority date (day/month/year)
29.06.2015

International Patent Classification (IPC) or both national classification and IPC
INV. G02B1/14 G02C7/10 G02B5/23 G02B1/116

Applicant
UNIVERSIDADE DE TRAS-OS-MONTES E ALTO DOURO

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 43*bis*.1(a)(i) with regard to novelty, inventive step and 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 usually 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 66.1*bis*(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:



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D-80298 Munich
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Date of completion of this opinion

see form
PCT/ISA/210

Authorized Officer

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Box No. I Basis of the 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:

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) | Yes: Claims | <u>3, 9-16</u> |
| | No: Claims | <u>1, 2, 4-8</u> |
| Inventive step (IS) | Yes: Claims | <u>10</u> |
| | No: Claims | <u>1-9, 11-16</u> |
| Industrial applicability (IA) | Yes: Claims | <u>1-16</u> |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following documents:
 - D1 US 6 639 039 B1 (FRIES KIRA [DE] ET AL) 28 October 2003 (2003-10-28)
 - D2 US 2011/033635 A1 (NISHIMOTO KEIJI [JP] ET AL) 10 February 2011 (2011-02-10)

- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 2 and 4-8 is not new in the sense of Article 33(2) PCT.
 - 2.1 Document D1 discloses an anti-scratch and photochromic coating (see abstract) applied in the form of varnish see col. 12, lines 49ff.) having the following composition by weight (see col. 12: "Example 1"):
 - 33% to 75% of a mixture of alkoxysilanes (10,54g/14,502g = 73% GPTMS);
 - 5% to 50% of plasticizers (2,52g/14,502g = 17% bis(epoxycyclohexyl)methyl carboxylate);
 - 0.5% to 2.5% of photochromic dyes (0,136g/14,502g = 0,9% photochromic dye 1,3,3-trimethylspiro[indolino-2,3-(3H)naphtho(2,1-b)-1,4-oxazine]);
 - 5% to 15% of additives ((0,286g+1,02g)/14,502g = 8,9% (one of the antioxidants or UV absorbers and crosslinking agent).Thus, the subject-matter of claim 1 lacks novelty (Art. 33(2) PCT).
 - 2.2 The additional features of claims 2 (see col. 9, lines 51ff.), 4 (see col. 4, line 48), 5 (see col. 6, line 55 to col. 7, line 24), 6 (see col. 6, lines 15f.), 7 (see col. 12, line 35) and 8 (see col. 1, lines 39ff.) are also known from D1. Hence, the subject-matter of these claims also lack novelty (Art. 33(2) PCT).

- 3 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 3, 9 and 11-16 does not involve an inventive step in the sense of Article 33(3) PCT.
 - 3.1 The compounds listed in claim 3 are typical additives and therefore do not provide an inventive effect (Art. 33(3) PCT).

- 3.2 D1 discloses all steps of the method specified in claim 9 (see col. 12: "Example 1") except for the multilayer treatment. However, providing antireflection layers on top of a hard coat is well-known in the art (see D2: fig. 1 and par.38). Therefore, the subject-matter of claim 9 lacks inventive step (Art. 33(3) PCT).
- 3.3 The additional specifications of claims 11-14 are either directly evident from D1 (see col. 12, lines 50ff) or well-known practise in the art. Therefore, the subject-matter of claims 11-14 is obvious (Art. 33(3) PCT).
- 3.4 As concerns the subject-matter of claims 15 and 16, this is considered to be obvious (Art. 33(3) PCT) with regard to the teaching of D2 (see pars.4 and 9-16).
- 4 None of the cited documents discloses or teaches the particular steps of preparing the solution (claim 10). The subject-matter of claim 10 therefore appears to be novel and inventive (Art. 33 PCT).