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Date of mailing (<i>day/month/year</i>) 01 November 2017 (01.11.2017)	
International application No. PCT/JP2016/064194	International filing date (<i>day/month/year</i>) 12 May 2016 (12.05.2016)
Applicant FUJIKURA LTD.	

The International Bureau transmits herewith the following number of copy(ies) of the:

- 1 English translation of the written opinion of the International Searching Authority for the designated or elected Office(s)
(Article 23(2), Rules 44bis.3(d) or 72.2bis)

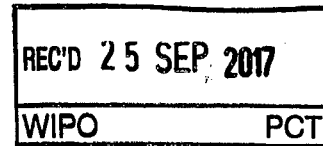
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23



Date
25.09.2017

Reference PS/170046/PHB	Application No./Patent No. 16817569.3 - 1553 PCT/JP2016064194 / ISA JP
Applicant/Proprietor Fujikura Ltd.	

For the aforementioned international application, the following documents are not available in Patentscope. You are kindly requested to forward to the EPO in its capacity as designated / elected Office:

- a) the publication of the international search report (Art. 20 PCT).
- b) the International Preliminary Examination Report (Art. 36(3)(a) PCT, R. 73.2(a) PCT).
- c) the copy (copies) of the priority document(s)
-
- according to PCT/RO/101 the applicant has complied with Rule 17.1(a), (b) or (b-bis) PCT.
- d) the International Preliminary Report on Patentability (Chapter I) (R. 44bis.2(a) PCT).
- e) the translation of the International Preliminary Report on Patentability (Chapter I) (R.44bis .3(c) PCT).
- f) **within the shortest possible delay, due to a request for early processing** (Art. 23(2) or 40(2) PCT):
 - the International Preliminary Report on Patentability (Chapter I) (R.44bis 2(b) PCT)
 - the translation of the International Preliminary Report on Patentability (Chapter I) (R.44bis.3(d) PCT)
 - the International Preliminary Examination Report or a copy of the written opinion established by the ISA (R. 73.2(b) PCT).
 - the documents of the international application according to Article 20 PCT prior to international publication (R. 47.4 PCT).
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Receiving Section

Answer of the International Bureau [IB]:

- The requested item(s) [a), b), c), d), e) and/or f)] is (are) not available to the IB.
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 - The Receiving Office/International Searching Authority/International Preliminary Examining Authority has been contacted.
- The requested item(s) is/are enclosed.
Remarks:

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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)	09.08.2016
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Applicant's or agent's file reference 2211
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FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/JP2016/064194	International filing date (day/month/year) 12.05.2016	Priority date (day/month/year) 02.07.2015
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International Patent Classification (IPC) or both national classification and IPC G02B6/024 (2006.01) i, G02B6/02 (2006.01) i

Applicant FUJIKURA LTD.

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 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**

International application No. PCT/JP2016/064194
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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																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 2px;">Novelty (N)</td> <td style="padding: 2px;">Claims <u>4-9</u></td> <td style="width: 10%; text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims <u>1-3</u></td> <td style="width: 10%; text-align: right; padding: 2px;">NO</td> </tr> <tr> <td style="padding: 2px;">Inventive step (IS)</td> <td style="padding: 2px;">Claims <u>5-9</u></td> <td style="width: 10%; text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims <u>1-4</u></td> <td style="width: 10%; text-align: right; padding: 2px;">NO</td> </tr> <tr> <td style="padding: 2px;">Industrial applicability (IA)</td> <td style="padding: 2px;">Claims <u>1-9</u></td> <td style="width: 10%; text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims _____</td> <td style="width: 10%; text-align: right; padding: 2px;">NO</td> </tr> </table>	Novelty (N)	Claims <u>4-9</u>	YES		Claims <u>1-3</u>	NO	Inventive step (IS)	Claims <u>5-9</u>	YES		Claims <u>1-4</u>	NO	Industrial applicability (IA)	Claims <u>1-9</u>	YES		Claims _____	NO	
Novelty (N)	Claims <u>4-9</u>	YES																	
	Claims <u>1-3</u>	NO																	
Inventive step (IS)	Claims <u>5-9</u>	YES																	
	Claims <u>1-4</u>	NO																	
Industrial applicability (IA)	Claims <u>1-9</u>	YES																	
	Claims _____	NO																	
2. Citations and explanations:																			
<p>Document 1: JP 62-249114 A (SUMITOMO ELECTRIC INDUSTRIES, LTD.) 30 October 1987, page 2, 'Prior Art', fig. 7(B) (Family: none)</p> <p>Document 2: JP 5-45527 A (FUJIKURA LTD.) 23 February 1993, paragraph [0006], fig. 1 (Family: none)</p> <p>Document 3: JP 2013-80126 A (SUMITOMO ELECTRIC INDUSTRIES, LTD.) 02 May 2013, paragraphs [0022]-[0029], fig. 3-4 & US 2013/0108206 A1, paragraphs [0031]-[0039], fig. 3-4 & WO 2013/051485 A & WO 2013/051485 A1</p> <p>Document 4: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 104686/1982 (Laid-open No. 9304/1984) (HITACHI CABLE LTD.) 21 January 1984, claims (Family: none)</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

The invention as in claims 1-3 lacks novelty in the light of document 1 cited in the international search report.

Regarding claims 1-2, document 1 discloses a multi-core polarization maintaining fiber wherein a plurality of stress imparting portions 2 provided so as to respectively sandwich a plurality of cores 3 are, in a cross section perpendicular to the lengthwise direction of the fiber, disposed in a plurality along the vertical direction and disposed in a plurality along the lateral direction (page 2, 'Prior Art', fig. 7(B)).

Regarding claim 3, it can be interpreted from document 1 (fig. 7(B)) that the stress imparting portions are disposed along a plurality of rows parallel to one another.

The invention as in claim 4 does not involve an inventive step in the light of document 1 cited in the international search report.

Regarding claim 4, a person skilled in the art could, as appropriate, dispose the plurality of stress imparting portions in document 1 at positions that have 90-degree rotational symmetry about the cladding center serving as a reference.

The invention as in claims 1-3 does not involve an inventive step in the light of documents 1-2 cited in the international search report.

Regarding claims 1-2, document 2 discloses a multi-core polarization maintaining fiber wherein a plurality of stress imparting portions 18 provided so as to

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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

respectively sandwich a plurality of cores 14 are, in a cross section perpendicular to the lengthwise direction of the fiber, disposed in a plurality along the vertical direction and disposed in a plurality along the lateral direction (paragraph [0006], fig. 1).

A polarization maintaining fiber in which the cross-sectional area of the stress imparting portions is set larger than the cross-sectional area of the cores such that a required stress is more easily imparted to the cores is well known (for example, see document 1, fig. 5-6, etc.). Therefore, a person skilled in the art could, as appropriate, set the cross-sectional area of the stress imparting portions larger than the cross-sectional area of the cores in the multi-core polarization maintaining fiber described in document 2.

Regarding claim 3, document 2 indicates that the stress imparting portions are disposed in a plurality along a plurality of rows parallel to one another (fig. 1).

The invention as in claims 5-9 is novel and involves an inventive step in relation to documents 1-4 cited in the international search report.

Documents 1-4 cited in the international search report do not disclose the feature set forth in claim 5 wherein one among the plurality of stress imparting portions is disposed at the cladding center, the feature set forth in claim 6 wherein the cores are respectively disposed between all mutually adjacent stress imparting portions, the feature set forth in claim 7 of including cores that are sandwiched by the stress imparting

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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

portions from directions mutually differing by 90 degrees, and the feature set forth in claims 8-9 of including cores that have different cutoff wavelengths. Moreover, said features would not be obvious to a person skilled in the art.