

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.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/IT2015/000296

International filing date (day/month/year)
09.12.2015

Priority date (day/month/year)
09.12.2014

International Patent Classification (IPC) or both national classification and IPC
INV. F21V8/00

Applicant
LAVANGA VITO

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 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 66.1bis(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:



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Date of completion of this opinion

see form
PCT/ISA/210

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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>4-8</u>
	No: Claims	<u>1-3</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-8</u>
Industrial applicability (IA)	Yes: Claims	<u>1-8</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 WO 99/28673 A1 (TRIBELSKI ZAMIR [IL]) 10 June 1999
 - D2 EP 0 195 431 A2 (MORI KEI) 24 September 1986
 - D3 US 2012/171733 A1 (IM CHUNG-SOON [US] ET AL)
5 July 2012
 - D4 DE 10 2009 044926 A1 (SCHOTT AG [DE]) 31 March 2011
 - D5 US 2012/275178 A1 (LOGUNOV STEPHAN LVOVICH [US])
1 November 2012
 - D6 US 2008/236183 A1 (IIMURA KEIJI [JP]) 2 October 2008
 - D7 US 5 542 016 A (KASCHKE KEVIN D [US]) 30 July 1996
 - D8 DE 20 2006 006387 U1 (RAMMINGER JOERG [DE])
31 August 2006
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 2 is not new in the sense of Article 33(2) PCT.
- 2.1 Document D1 discloses a method to distribute light in a medium, wherein a side emitting optical fiber (1) is submerged in said medium, said optical fiber being arranged in such a way that light which is introduced into said optical fiber (1), is distributed in a substantially uniform manner in said medium (cf. e.g. page 6, second paragraph, and the figures). Thus, document D1 discloses the method of claim 1.
- 2.2 Documents D2 to D4 also disclose a method according to claim 1 (D2, page 8, line 12 - page 10, line 7; figure 5; D3, paragraphs [0097], [0098]; paragraphs [0135], [0136]; figure 1; D4, paragraph [0067]; figure 1).
- 2.3 Document D1 also discloses a device adapted to distribute light homogeneously in a medium, the device comprising a side emitting optical fiber (10), said optical fiber comprising a plurality of parallel branches located at a close

distance (cf. page 5, third paragraph, and the figures), said parallel branches being enclosed in a sandwich made with a pair of sheets (2, 3) transparent to the spectrum of interest (page 6, last paragraph), said optical fiber being provided with an inlet (18), through which a light signal is inserted, said signal spreading in said medium through the lateral emission of said optical fiber (page 4, first paragraph). Thus, document D1 also discloses the device of claim 2.

- 3 Dependent claims 3-8 do not contain any additional features which, in combination with the features of claim 2, meet the requirements of Article 33 PCT in respect of novelty and/or inventive step, for the following reasons.
 - 3.1 Claims 3, 4: according to D1, an inlet is provided on at least one of the fiber's ends (D1, page 4, first paragraph). It is obvious to provide an inlet on both ends (cf. D5, figure 6E; D6, figure 4; D7, figure 10).
 - 3.2 Claim 5: it is also obvious to vary the light emission along the length of the fiber, either to compensate for the variation of intensity of light propagating within the fiber (cf. D5, figures 4A, 4B), or to obtain a desired light distribution.
 - 3.3 Claim 6: the expression that a stretch of fiber is of the "point-to-point type" is not clear (Article 6 PCT). It is assumed here that this feature relates to fibers having inlet ends that are not light emitting, in order to transmit light towards the sandwiched fiber section without substantial losses. It is obvious for the skilled person to provide light emission only in those parts of the fiber where it is desired.
 - 3.4 Claims 7, 8: it is also obvious to provide a flexible, e.g. textile-like sandwich structure that can be formed into different shapes, according to the desired application (cf. D8, paragraph [0003]), and to arrange several devices in parallel to each other (cf. D4, figure 5).