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Date	18.03.16
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Reference I 8666 / AS	Application No./Patent No. 13796734.5 - 1553 / 2861956 PCT/US2013043453
Applicant/Proprietor Iris International, Inc.	

Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 62 EPC, the supplementary European search report (Art. 153(7) EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

☒ 0 additional set(s) of copies of such documents is (are) enclosed as well.

Refund of the search fee

If applicable under Article 9 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

Should you wish to further prosecute this application in the examination phase, your attention is drawn to the provisions of Rule 70a EPC. An invitation to respond to the extended European search report will be issued shortly (R. 70(2) EPC).



CYTEK V. BECKMAN
IPR2025-01319
BECKMAN 2020

The examination is being carried out on the **following application documents**

Description, Pages

1-48 as published

Claims, Numbers

1-15 filed with entry into the regional phase before the EPO

Drawings, Sheets

1/23-23/23 as published

1 Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure.

- D1 US 6 683 314 B2 (OOSTMAN CLIFFORD A [US] ET AL) 27 January 2004 (2004-01-27)
- D2 US 2004/165828 A1 (CAPEWELL DALE [US] ET AL) 26 August 2004 (2004-08-26)
- D3 US 6 159 686 A (KARDOS KEITH W [US] ET AL) 12 December 2000 (2000-12-12)
- D4 K. GODA ET AL: "Serial time-encoded amplified imaging for real-time observation of fast dynamic phenomena",
NATURE,
vol. 458, no. 7242, 30 April 2009 (2009-04-30), pages 1145-1149,
XP055069075,
ISSN: 0028-0836, DOI: 10.1038/nature07980

2 Article 84 EPC, clarity

The application does not meet the requirements of Article 84 EPC, because independent claim 1 is not clear. It is not clear if the feature "*a first semiconductor detector*" is part or not of the claimed flow cytometer; if the detector is to be included in the matter for which protection is sought, then the claim should be amended in the following way: *a flow cytometer comprising, a first semiconductor detector*.

In the present communication claim 1 is interpreted as if the first detector is not part of the claimed subject matter, but as if the first focusing optical element is suitable for focusing the first light beam to a first semiconductor detector.

3 Independent claim 1

Inventive step Article 56 EPC

The present application does not meet the requirements of Article 52(1) EPC because the subject-matter of claim 1 does not involve an inventive step within the meaning of Article 56 EPC.

Document D1 discloses:

*A flow cytometer (column 9, lines 4-5; figure 15) having a wavelength division multiplexer (WDM) (column 6, lines 40-65; figure 5) , the WDM comprising:
an extended light source providing light that forms an object (figure 5, optical fiber 123);
a collimating optical element that captures light from the extended light source and projects a magnified image of the object as a first light beam (figure 5, collimating lens 145); and
a first focusing optical element configured to focus the first light beam ~~to a size smaller than the object of the extended light source~~ to a first semiconductor detector (figure 5, focussing element 158).*

The difference between the flow cytometer of claim 1 and the one of document D1 is that in the flow cytometer of claim 1 the focusing optical element is able to focus the first light beam to a size smaller than the object of the extended light source, whilst in the cytometer of document D1 the size of the first light beam is not specified.

The technical effect of this difference is that by reducing the size of the focused light beam it is possible to reduce the sensitive area of the cytometer light detector and to increase the tolerance to detector misalignment.

The problem to be solved starting from the above mentioned difference is how to modify the system of D1 in order reduce its dimension and to improve its efficiency.

Document D2 shows an optical system comprising a WDM having a paraxial optical assembly and an aspheric lens to focus the first beam on the detector ([0027]; paragraph [0039]; figures 5a, 5b, 6) ; in D2 it is disclosed that with the paraxial optical assembly of D2 the size of the focused light beam can be minimised in order to maximize the tolerance to detector misalignment ([0027]; paragraph [0038]; in particular with the WDM of D2 it is also possible to de_magnify the image of the object of the extended light source on the photodetector; then the skilled person starting from D1 would go to document D2 in order to solve the problem posed and would implement the WDM of document D2 in the system of claim 1 without the involvement of an inventive step.

Therefore the subject matter of claim 1 does not involve an inventive step, within the meaning of Art. 56 EPC, over the disclosure of document D in combination with the one of document D2.

4 Dependent claims 2-15

Dependent claims 2-15 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the EPC with respect to inventive step.

Claims 2,9,10,11,12: see D2 (paragraph [0034]; paragraph [0041]; figure 3a ref. sign 40, 5a ref. sign 270a, 907), focusing the light to a spot of less than 1 mm is considered to be easily made by the skilled person by simply choosing the appropriate lens, without the involvement of an inventive step

Claim 3: see D2 figure 5b ref. signs 270b, 270c, 270d

Claims 4,5,6: see D2 figure 5a, focusing the first light beam to a dimension of 1 mm is considered to be easily made by the skilled person by simply choosing the appropriate lens, without the involvement of an inventive step.

Claims 7,8: see D2 paragraph [0038] - paragraph [0042].

Claim 12: see D2 figure 5b, paragraph [0041].

Claim 13: see D2 figure 5a.

Claim 14: see D2 figure 5a.

Claim 15: Starting from D1+D2 a is considered as a feature which would be implemented by the skilled person without the involvement of an inventive step.

5 Further cited prior art

Documents D3 and D4 are considered as background art with respect to the subject matter of claims 1-15, see D3 (column 36, line 66 - column 37, line 13; figure 6), D4 (page 1146; figure 1).

6 Remarks

Should the present application be pursued, the Applicant is requested to point out and discuss in his letter of reply any difference which would distinguish the subject-matter of the present application from the disclosures of the available prior art, in the light of novelty (Art. 54(1), (2) EPC) and inventive step (Art. 56 EPC).

When filing amended claims the attention of the applicant is drawn to the fact that the application may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC). Amendments should be made by filing replacement pages. The applicant should take account of the requirements of Rule 50(1) EPC. According to Rule 50(1) in conjunction with Rule 49(8) EPC, amendments shall be typed or printed. Handwritten amendments may only be made in documents other than those replacing application documents (Rule 50(2) EPC)

In order to comply with the requirements of Rule 137(4) EPC, the applicant should clearly identify the amendments made, irrespective of whether they concern amendments by addition, replacement or deletion, and indicate the passages of the application as filed on which these amendments are based (see Guidelines H III, 2.1).

Information on Search Strategy - Pilot phase (see OJ 2015, A86)

The type of information contained in this sheet may change during the pilot for improving the usefulness of this new service.

Application Number

EP 13 79 6734

TITLE: FLOW CYTOMETER

APPLICANT: Iris International, Inc.

IPC CLASSIFICATION: G01N15/14, G02B6/293, G01N15/10

EXAMINER: Traversa, Marzia

CONSULTED DATABASES: WPI, BIOSIS, COMPDX, EPODOC, MEDLINE, ANSERA, NPL

CLASSIFICATION SYMBOLS DEFINING EXTENT OF THE SEARCH:

IPC:

CPC: G02B6/4215, G02B6/29365, G01N21/64, G02B6/2938, G01N21/00, B01L3/5027, G01N15/00, H04J14/02, G01N15/14

FI/F-TERMS:

KEYWORDS OR OTHER ELEMENTS FEATURING THE INVENTION:

cytometer;
wavelength division multiplexing;
optical fiber;

SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 13 79 6734

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y,D	US 6 683 314 B2 (OOSTMAN CLIFFORD A [US] ET AL) 27 January 2004 (2004-01-27) * column 6, lines 40-65 * * column 9, lines 4-5 * * figure 5 * * figure 15 *	1-15	INV. G01N15/14 G02B6/293 G01N15/10
Y	US 2004/165828 A1 (CAPEWELL DALE [US] ET AL) 26 August 2004 (2004-08-26) * paragraph [0027] * * paragraph [0034] * * paragraph [0038] - paragraph [0042] * * figure 3a * * figures 5a, 5b, 6 *	1-15	
A	US 6 159 686 A (KARDOS KEITH W [US] ET AL) 12 December 2000 (2000-12-12) * column 36, line 66 - column 37, line 13 * * figure 6 *	1-15	
A	K. GODA ET AL: "Serial time-encoded amplified imaging for real-time observation of fast dynamic phenomena", NATURE, vol. 458, no. 7242, 30 April 2009 (2009-04-30), pages 1145-1149, XP055069075, ISSN: 0028-0836, DOI: 10.1038/nature07980 * page 1146 * * figure 1 *	1-15	TECHNICAL FIELDS SEARCHED (IPC) G02B G01N B01L
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
Place of search The Hague		Date of completion of the search 11 March 2016	Examiner Traversa, Marzia
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

1
EPO FORM 1503 03.82 (P04C04)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 79 6734

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-03-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6683314	B2	27-01-2004	EP 1428014 A1 16-06-2004
			US 2003048539 A1 13-03-2003
			US 2005104008 A1 19-05-2005
			WO 03021241 A1 13-03-2003
US 2004165828	A1	26-08-2004	AU 2002245067 A1 24-07-2002
			CA 2427593 A1 18-07-2002
			EP 1334390 A2 13-08-2003
			JP 2004533004 A 28-10-2004
			TW 531673 B 11-05-2003
			US 2002064191 A1 30-05-2002
			US 2004165828 A1 26-08-2004
			WO 02056077 A2 18-07-2002
US 6159686	A	12-12-2000	US 6159686 A 12-12-2000
			US 6312914 B1 06-11-2001