

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
12 March 2009 (12.03.2009)

PCT

(10) International Publication Number  
**WO 2009/033064 A3**

(51) International Patent Classification:  
**G01B 9/02** (2006.01)

(21) International Application Number:  
PCT/US2008/075456

(22) International Filing Date:  
5 September 2008 (05.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/970,157 5 September 2007 (05.09.2007) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

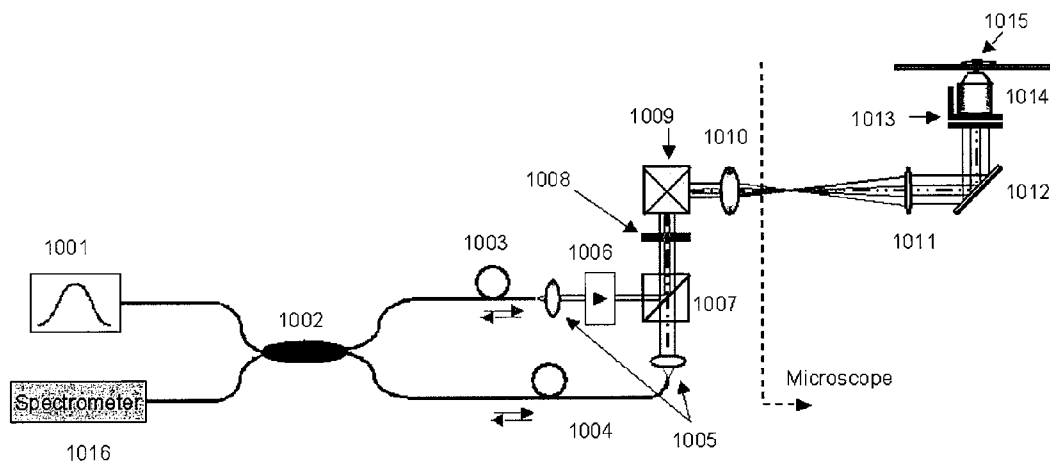
Published:

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
30 July 2009

(54) Title: SYSTEMS, METHODS AND COMPUTER-ACCESSIBLE MEDIUM FOR PROVIDING SPECTRAL-DOMAIN OPTICAL COHERENCE PHASE MICROSCOPY FOR CELL AND DEEP TISSUE IMAGING

FIGURE 1



(57) Abstract: An apparatus and the corresponding method, representing a common-path interferometer, whereby the sample and reference beams have different diameters. These first and second beams first travel separated paths in order to change their diameter. After being reunited on a common path, a first partial reflector is used to generate a first interferogram carrying information about fluctuations in the separated paths. The transmitted beams are directed onto the sample, respectively reference reflecting flat in close proximity to the sample, on a common path. The spectral interferogram recorded as the interference of these third and fourth beams is used to determine information relating to the sample.

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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/075456

## A. CLASSIFICATION OF SUBJECT MATTER

INV. G01B9/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 555 087 A (MIYAGAWA ICHIROU [JP] ET AL) 10 September 1996 (1996-09-10)	1-3,5-7, 9
Y	column 8 - column 12; figures 1,2	8
X	GB 2 298 054 A (NIKON PRECISION INC [US]) 21 August 1996 (1996-08-21)	1,4,9
Y	page 1 - page 5; figures 1,2	8
X	US 2005/057756 A1 (FANG-YEN CHRISTOPHER M [US] ET AL) 17 March 2005 (2005-03-17)	1-3,5-7, 9
Y	paragraph [0212] - paragraph [0228]; figures 19,34	8
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

20 February 2009

Date of mailing of the international search report

10/06/2009

Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/075456

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 2006/124860 A (GEN HOSPITAL CORP [US];  JOO CHULMIN [US]; DE BOER JOHANNES F [US])  23 November 2006 (2006-11-23)  page 7 - page 11; figures 1-6  abstract</p> <p style="text-align: center;">-----</p>	<p>1-3, 5-7,  9</p>

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2008/075456

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

An apparatus and the corresponding method, representing an interferometer adapted to produce and receive first interferogram to generate signal about fluctuations in the separated paths of two partial beams and to produce and receive second interferogram to determine information regarding spectrally resolved interference of other two partial beams relating to the sample.

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2. claims: 10-35

Computer-accessible media with instructions to process data corresponding to interference between a sample and a reference into data carrying information on directional displacement and diffusion properties of the sample.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/075456

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