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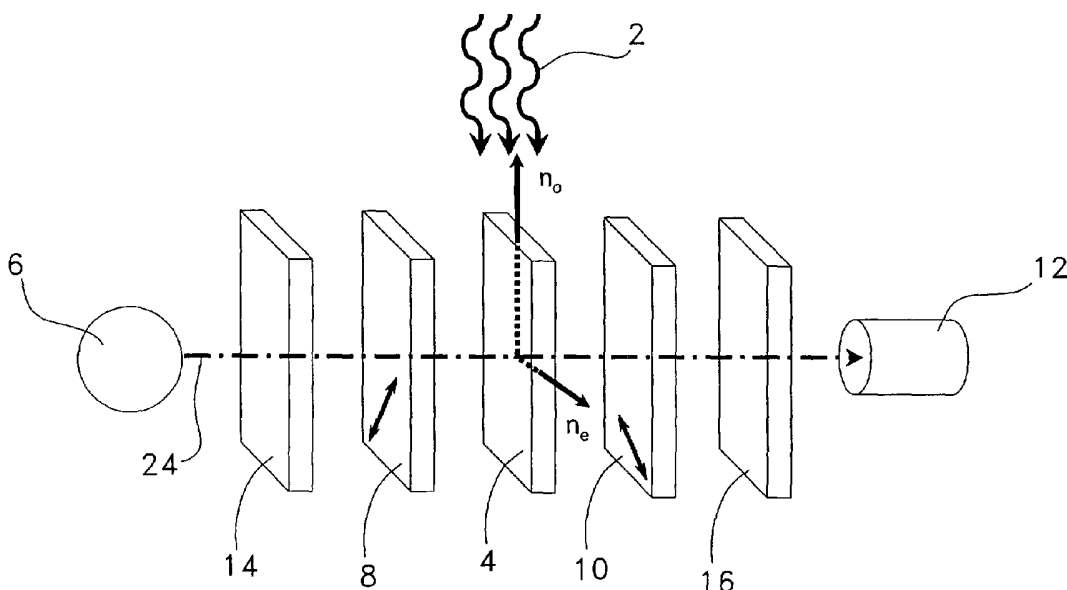
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(88) Date of publication of the international search report:
4 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: POLARISATION INTERFEROMETRIC METHOD AND SENSOR FOR DETECTING A CHEMICAL SUBSTANCE



(57) Abstract: A method and a sensor for detecting a chemical substance in an analyte. An anisotropic material is subjected to the analyte. Light is passed through the anisotropic material and collected. A change of an optical anisotropy of the collected light is detected, the change being indicative of the chemical substance in the analyte.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01996

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N21/21

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)
IPC 7 G01N

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, WPI Data, COMPENDEX, EMBASE, MEDLINE, INSPEC, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BEOM-HOAN O ET AL: "VAPOR SENSOR REALIZED IN AN ULTRACOMPACT POLARIZATION INTERFEROMETER BUILT OF A FREESTANDING POROUS-SILICON FORM BIREFRINGENT FILM" IEEE PHOTONICS TECHNOLOGY LETTERS, IEEE INC. NEW YORK, US, vol. 15, no. 6, June 2003 (2003-06), pages 834-836, XP001175197 ISSN: 1041-1135 pages 58-59 figure 1</p> <p style="text-align: center;">----- -/--</p>	1-100

Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
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Date of the actual completion of the international search

6 May 2004

Date of mailing of the international search report

25.08.2004

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 03/01996

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>LIU R ET AL: "Novel porous silicon vapor sensor based on polarization interferometry" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 87, no. 1, 15 November 2002 (2002-11-15), pages 58-62, XP004391077 ISSN: 0925-4005 page 834 figure 1</p> <p style="text-align: center;">-----</p>	1-100
A	<p>RONG LIU ET AL: "Porous silicon vapor sensor based on polarization interferometry" LEOS 2001. 14TH. ANNUAL MEETING OF THE IEEE LASERS & ELECTRO-OPTICS SOCIETY. SAN DIEGO, CA, NOV. 11 - 15, 2001, ANNUAL MEETING OF THE IEEE LASERS AND ELECTRO-OPTICS SOCIETY, NEW YORK, NY: IEEE, US, vol. 1 OF 2, 14 November 2001 (2001-11-14), pages 820-821, XP010566702 ISBN: 0-7803-7105-4 page 820 figure 1</p> <p style="text-align: center;">-----</p>	1-100
A	<p>KOOYMAN R P H ET AL: "Optical fiber immunosensor based on polarimetry" TRANSDUCERS. SAN FRANCISCO, JUNE 24 - 27, 1991, PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SOLID STATE SENSORS AND ACTUATORS, NEW YORK, IEEE, US, vol. CONF. 6, 24 June 1991 (1991-06-24), pages 376-377, XP010037367 ISBN: 0-87942-585-7 the whole document</p> <p style="text-align: center;">-----</p>	1-100
A	<p>HEIDEMAN R G ET AL: "POLARIMETRIC OPTICAL-FIBRE SENSOR FOR BIOCHEMICAL MEASUREMENTS" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. B12, no. 3, 15 April 1993 (1993-04-15), pages 205-212, XP000397509 ISSN: 0925-4005 pages 205-206</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">-/--</p>	1-100

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01996

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	VELDHUIS G J ET AL: "An integrated optical Bragg-reflector used as a chemo-optical sensor" PURE AND APPLIED OPTICS, BRISTOL, GB, vol. 7, no. 1, 1998, pages L23-L26, XP002087839 ISSN: 0963-9659 pages L23-L24 -----	1-100

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA 03/01996

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers 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.
- 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: 1-100

Polarisation interferometric method and sensor for detecting a chemical substance based on an optically anisotropic material that is surrounded by absorbent particles.

2. claims: 101-200

Polarisation interferometric method and sensor for detecting a chemical substance based on an optically anisotropic material.

3. claims: 201-202

Polarisation interferometric method and sensor for detecting a chemical substance based on an optically anisotropic material other than porous silicon.
