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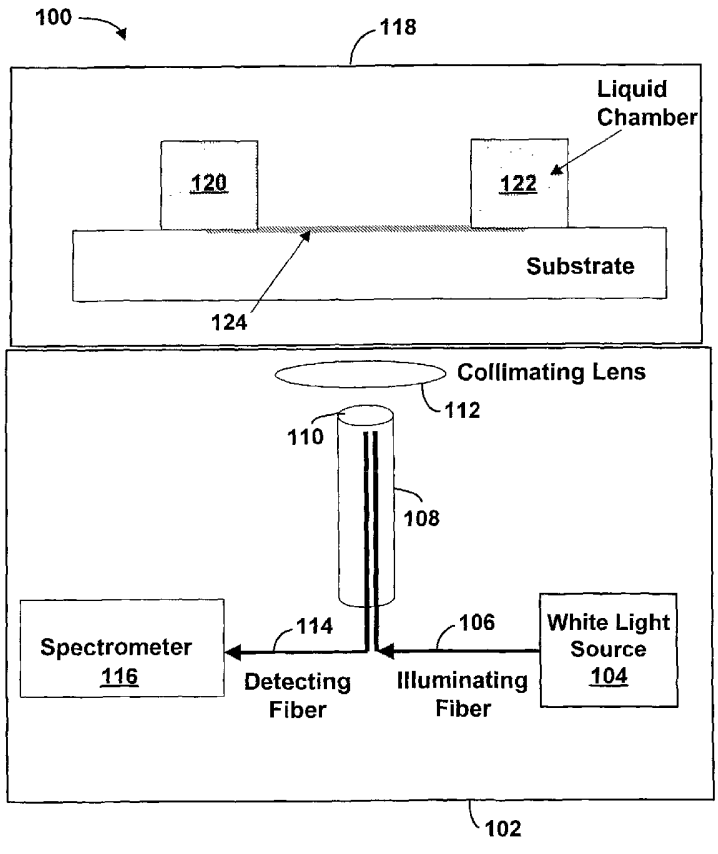
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[Continued on next page]

(54) Title: DETECTION OF BIOCHEMICAL INTERACTIONS ON A BIOSENSOR USING TUNABLE FILTERS AND TUNABLE LASERS



(57) Abstract: An apparatus and method for detection of peak wavelength values of colorimetric resonant optical biosensors using tunable filters and tunable lasers is provided. Biomolecular interactions may be detected on a biosensor by directing collimated white light towards a surface of the biosensor. Molecular binding on the surface of the biosensor is indicated by a shift in the peak wavelength value of reflected or transmitted light from the biosensor, while an increase in the wavelength corresponds to an increase in molecular absorption. A tunable laser light source may generate the collimated white light and a tunable filter may receive the reflected or transmitted light and pass the light to a photodiode sensor. The photodiode sensor then quantifies an amount of the light reflected or transmitted through the tunable filter as a function of the tuning voltage of the tunable filter.

WO 2004/102193 A3

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/50 G01N33/53 G01N33/543

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, PAJ, BIOSIS, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GARNACHE A ET AL: "HIGH-SENSITIVITY INTRACAVITY LASER ABSORPTION SPECTROSCOPY WITH VERTICAL-EXTERNAL-CAVITY SURFACE-EMITTING SEMICONDUCTOR LASERS" OPTICS LETTERS, OPTICAL SOCIETY OF AMERICA, WASHINGTON, US, vol. 24, no. 12, 15 June 1999 (1999-06-15), pages 826-828, XP000835274 ISSN: 0146-9592 the whole document --- WO 99/57789 A (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA) 11 November 1999 (1999-11-11) claim 1; figure 1 --- -/--	1-38 1-38

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 091 504 A (SQUARE ONE TECHNOLOGY) 18 July 2000 (2000-07-18) claims 1-19	1-38
X	CULLUM B M ET AL: "Development of a portable Raman spectrometer for medical diagnostics" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, US, vol. 4615, 2002, pages 82-90, XP002290917 ISSN: 0277-786X the whole document	1,5, 8-17, 19-21, 23,24, 28-33, 35-38
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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/US2004/014262

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