

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 December 2006 (28.12.2006)

PCT

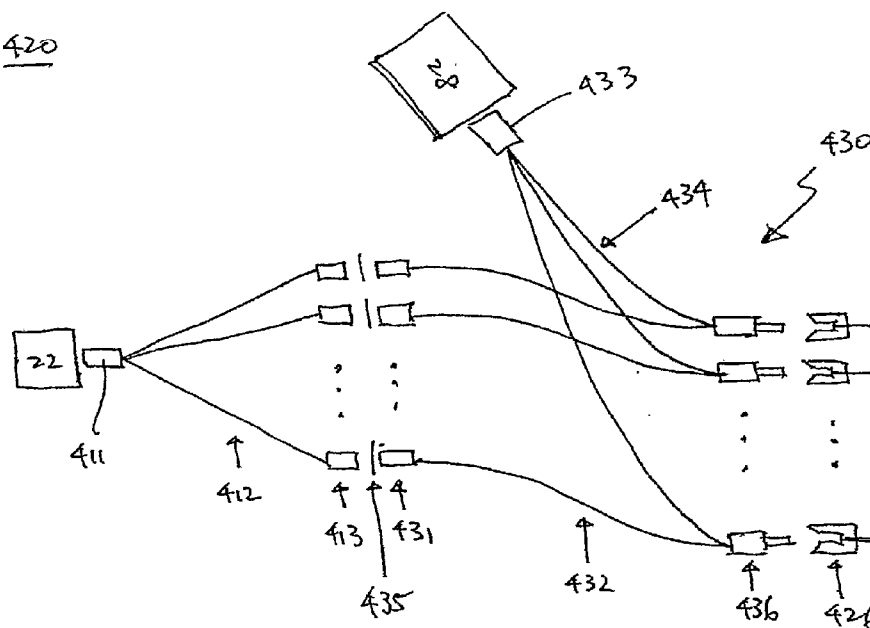
(10) International Publication Number
WO 2006/138294 A3

- (51) International Patent Classification:
G01B 9/02 (2006.01)
- (21) International Application Number:
PCT/US2006/022964
- (22) International Filing Date: 13 June 2006 (13.06.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/690,324 13 June 2005 (13.06.2005) US
11/423,671 12 June 2006 (12.06.2006) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 10/981,901 (CIP)
Filed on 4 November 2004 (04.11.2004)
- (71) Applicant (for all designated States except US): FORTE-BIO, INC. [US/US]; 1360 Willow Road, Suite 205, Menlo Park, CA 94025-1516 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): TAN, Hong [US/US]; 1031 Prouty Way, San Jose, CA 9512 (US). TAN, Yushan [CN/CN]; 100 Tianlin Road #9 301, Shanghai, (CN). WITTE, Krista, Leah [US/US]; 27924 Farm

- Hill, Hayward, CA 94542 (US). ZUK, Robert [US/US]; 2 Heather Drive, Atherton, CA 94027-2006 (US). CAR-RICATO, Greg, L. [US/US]; 53 Southmar Court, San Jose, CA 95138 (US). LOCKARD, Scott [US/US]; 16806 Frank Avenue, Los Gatos, CA 95032-3307 (US).
- (74) Agents: FARN, Michael, W. et al.; FENWICK & WEST LLP, Silicon Valley Center, 801 California Street, Mountain View, CA 94041 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,

[Continued on next page]

(54) Title: FIBER-OPTIC ASSAY APPARATUS BASED ON PHASE-SHIFT INTERFEROMETRY



(57) Abstract: Apparatus and method for detecting an analyte in a sample based on optical interference. The apparatus includes a light source, detector unit and one or more disposable detector tips. The apparatus also includes an optical coupling assembly that couples light from the source to the detector tips, and from the detector tips to the detector unit.

WO 2006/138294 A3



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
26 July 2007

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

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/22964

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **G01B 9/02(2006.01)**

USPC: 356/478
 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)
 U.S. : 356/477-480

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,804,453 A (CHEN) 08 September 1998 (08.09.1998), see figures 8 and 11.	1-3,9-12,17-20,23-28,34,35 ----- 21,22,29-33
X Y --- A	YANG et al, Direct monitoring of antigen-antibody interactions by optical fiber bioprobe, proceedings of SPIE, Vol 5254, pages 431-436, see figures 1-3. US 5,606,170 A (SAASKI et al) 25 February 1997 (25.02.1997), see figure 6.	1-4,9,10,18-20 21,22,30-32 ----- 5-8,13-16
Y --- A	US 6,139,797 A (SAASKI et al) 31 October 2000 (31.10.2000), see figures 2 and 6.	29,33 ----- 5-8,13-16

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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 15 May 2007 (15.05.2007)	Date of mailing of the international search report 01 JUN 2007
---	--

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer <i>Samuel A. Turner</i> Samuel A. Turner Telephone No. 571-272-2432
---	--