(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 16 March 2006 (16.03.2006)

(10) International Publication Number WO 2006/028507 A3

(51) International Patent Classification:

G01N 33/48 (2006.01) G01N 33/53 (2006.01) G01N 33/50 (2006.01) G01N 33/553 (2006.01) G01N 33/52 (2006.01)

(21) International Application Number:

PCT/US2005/009675

(22) International Filing Date: 24 March 2005 (24.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/555,944 24 March 2004 (24.03.2004) US 60/569,760 10 May 2004 (10.05.2004) US 60/628,061 15 November 2004 (15.11.2004) US 11/087,262 23 March 2005 (23.03.2005) US

- (71) Applicant (for all designated States except US): PURDUE RESEARCH FOUNDATION [US/US]; 3000 Kent Avenue, West Lafayette, IN 47906 (US).
- (72) Inventors: DRACHEV, Vladimir, P.; 3345 Webster Street, West Lafayette, IN 47906 (US). THORESON, Mark, D.; 472 N. Salisbury Street, West Lafayette, IN 47906 (US). NASHINE, Vishal, C.; 132 Nimitz Drive, Apt. 11, West Lafayette, IN 47906 (US). NARSIMHAN, Meena, L.; 3456 Hamilton Street, West Lafayette, IN 47906 (US). KHALIULLIN, Eldar, N.; 2550 Yeager Road, Apt. 5-5, West Lafayette, IN 47906 (US). BEN-AMOTZ, Dor; 3275 W. 450 N., West Lafayette,

IN 47906 (US). SHALAEV, Vladimir; 6210 Old State Road 26 W., West Lafayette, IN 47906 (US). DAVISSON, Vincent, J.; 434 Littleton Street, West Lafayette, IN 47906 (US).

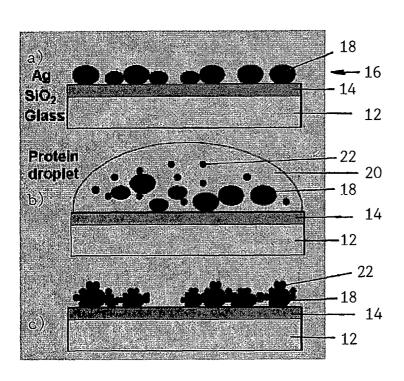
- (74) Agent: RICHARDSON, James, A.; Brinks Hofer Gilson & Lione, One Indiana Square, Suite 1600, Indianapolis, IN 46204 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, MC, NL, 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

[Continued on next page]

(54) Title: ADAPTIVE METAL FILMS FOR DETECTION OF BIOMOLECULES



(57) Abstract: An adaptive surface for supporting an analyte to be examined, includes a support layer, a metal island layer, and an adhesive layer by which the metal island layer is attached to the support layer, the adhesive layer and metal island layer being interactive with an analyte containing solution to permit movement of at least some of the islands on the adhesive layer into increasingly close proximity during drying of the analyte solution.

WO 2006/028507 A3

THE REPORT OF THE PROPERTY OF T

(88) Date of publication of the international search report: $7~\mathrm{May}~2009$

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/09675

A. CLASSIFICATION OF SUBJECT MATTER			
IPC: G01N 33/48(2006.01),33/50(2006.01),33/52(2006.01),33/53(2006.01),33/553(2006.01)			
USPC: 422/56,58,81,82.05,100,102;435/6,7.1,9,287.2,287.9,288.7;436/20,52,53,172,180			
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.: 422/56,58,81,82.05,100,102;435/6,7.1,9,287.2,287.9,288.7;436/20,52,53,172,180			
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			
	UMENTS CONSIDERED TO BE RELEVANT		D 1 1 . N
Category *	Citation of document, with indication, where a		Relevant to claim No.
X	US 2002/0160522 A1 (RUBINSTEIN et al) 31 Oct 2 and 16, and Fig. 1	002 (31.10.2003), Abstract, pp1-3, 13,	1, 2, 4, 9-11, and 13-18
Y	and roj and rig.		1-22
Y	US 5,611,998 (AUSSENEGG et al) 18 Mar 1997 (18.03.1997), Fig. 1 and Abstract		3-8, 10, 11, 14, and 15 15
Y	US 5,864,397 (VO-DINH) 26 Jan 1999 (26.01.1999), columns 2 and 4		19-22
		•	
,.			
Further documents are listed in the continuation of Box C. See patent family annex.			
Special categories of cited documents:		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the	
"A" document particular	defining the general state of the art which is not considered to be of relevance	principle or theory underlying the inve	ntion
earlier application or patent 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)		"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	
"O" document referring to an oral disclosure, use, exhibition or other means		combined with one or more other such being obvious to a person skilled in the	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search Date of mailing of the international search report			
17 June 2008 (17.06.2008)		25 11- 200h A	
Name and mailing address of the ISA/US		Authorized of Control	
Mail Stop PCT. Attn: ISA/US		UNSUJUNG WWW / WOODS	
P.O. Box 1450		7	
Alexandria, Virginia 22313-1450 Telephone No. 571-272-1600			
Facsimile No. (571) 273-3201			

Form PCT/ISA/210 (second sheet) (April 2007)