

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/010105 A2

(51) International Patent Classification⁷: **G01N**
(21) International Application Number:
PCT/US2003/022932
(22) International Filing Date: 22 July 2003 (22.07.2003)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/398,198 23 July 2002 (23.07.2002) US
10/393,942 21 March 2003 (21.03.2003) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant: **THE TEXAS A & M UNIVERSITY SYSTEM** [US/US]; Technology Licensing Office, Mail Stop 3369, College Station, TX 77843 (US).

(72) Inventors: **CROOKS, Richard, M.**; 9830 Dogwood Trail, College Station, TX 77845 (US). **ZHAN, Wei**; 1101 Southwest Parkway #1104, College Station, TX 77840 (US). **ALVAREZ, Julio**; 2401 Welch Avenue, Apt. 414, College Station, TX 77840 (US).

(74) Agent: **WILLIAMS, Bradley, P.**; Baker Botts L.L.P., 2001 Ross Avenue, Suite 600, Dallas, TX 75201 (US).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

Published:

- *without international search report and to be republished upon receipt of that report*

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: **PHOTONIC SIGNAL REPORTING OF ELECTROCHEMICAL EVENTS**

(57) **Abstract:** According to one embodiment of the invention, a method for detecting the presence or amount of an analyte includes associating a first electrolyte solution containing the analyte with a first region of a bipolar electrode, associating a second electrolyte solution containing an electrochemiluminescent system with a second region of the bipolar electrode, ionically isolating the first electrolyte solution from the second electrolyte solution, causing a potential difference between the first and second electrolyte solutions, and detecting light emitted from the electrochemiluminescent system, thereby indicating the presence or amount of the analyte at the first region of the bipolar electrode.

