(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 October 2014 (23.10.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/171891 A1

(51) International Patent Classification:
G01N 33/53 (2006.01)

(21) International Application Number:
PCT/SG2014/000163

(22) International Filing Date:
14 April 2014 (14.04.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/811,984 15 April 2013 (15.04.2013) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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(54) Title: ELECTROCHEMICAL LATERAL FLOW BIOASSAY AND BIOSENSOR

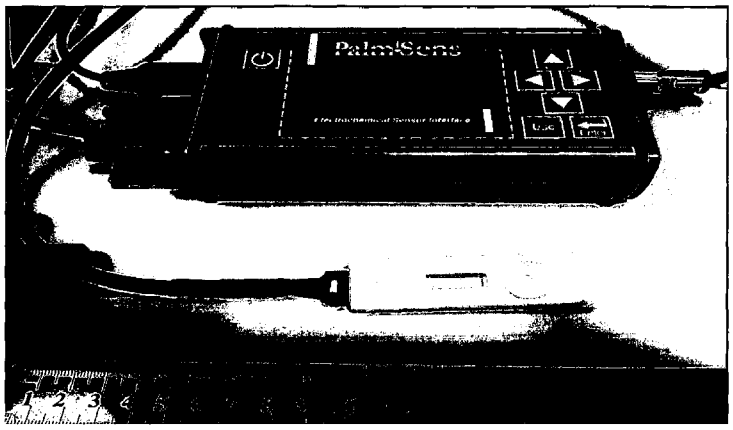


Figure 2A

(57) Abstract: The electrochemical lateral flow biosensor (ELFB) comprising a novel ELFB strip and electronic detector unit, to which said strip is connected using cable or wirelessly. The strip is made of (a) polymeric hydrophobic membrane, wherein said membrane provides a solid support and enables the capillary flow along the strip; (b) conjugation pad, wherein said pad is placed over and in contact with said membrane at one end of the strip and contains formulation of the adsorbed dehydrated labelled conjugate particles, wherein said conjugate particles are coated with the biorecognition element of the assay and coated or filled with the electrochemically active component (EAC); (c) sampling pad, wherein said pad is placed on top of and in contact with said conjugation pad and provides adsorption of the liquid sample; (d) screen-printed electrode (SPE), wherein said electrode is coated with the immobilised capture antibodies; and (e) wick pad, wherein said pad is placed on top and in contact with said SPE and provides absorption of excess reagents maintaining a lateral flow along the strip. The ELFB can be used for rapid and early detection and quantity analysis of bacterial, parasitic, viral infections, and tumours in biological liquids, toxins, mycotoxins, explosives and other pollutants in wastewater.

WO 2014/171891 A1

Published:

— *with international search report (Art. 21(3))*