

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

(19) World Intellectual Property
Organization
International Bureau

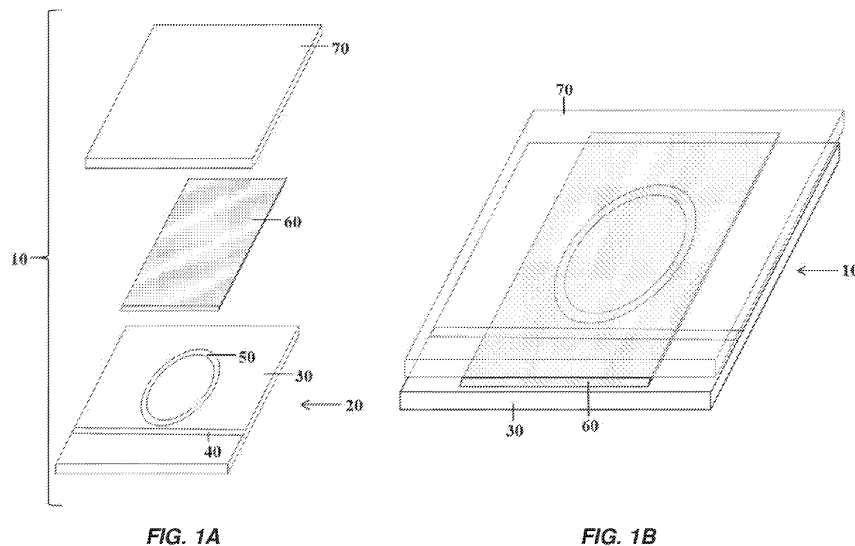
(43) International Publication Date
20 February 2020 (20.02.2020)



(10) International Publication Number
WO 2020/037307 A1

- (51) **International Patent Classification:**
G01N 21/77 (2006.01) *B01L 3/00* (2006.01)
- (21) **International Application Number:**
PCT/US2019/046993
- (22) **International Filing Date:**
19 August 2019 (19.08.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/719,499 17 August 2018 (17.08.2018) US
- (71) **Applicant: UNIVERSITY OF ROCHESTER** [US/US];
601 Elmwood Avenue, Box URV, Rochester, NY 14642 (US).
- (72) **Inventors: MILLER, Benjamin, L.;** 17 Rolling Meadows Way, Penfield, NY 14526 (US). **BRYAN, Michael;** 13 Park Forest Dr., Pittsford, NY 14534 (US). **STEINER, Daniel;** 116 Field Street, Rochester, NY 14620 (US).
- (74) **Agent: MERKEL, Edwin, V. et al.;** Pepper Hamilton LLP, 70 Linden Oaks, Suite 210, Rochester, NY 14625 (US).
- (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, ST, 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,

(54) **Title:** OPTICAL BIOSENSOR COMPRISING DISPOSABLE DIAGNOSTIC MEMBRANE AND PERMANENT PHOTONIC SENSING DEVICE



(57) **Abstract:** The present invention is directed to a biosensor (10) having a photonic sensing device (20), a sheet of a porous material (60), and an optically clear cover layer (70). The optically clear cover layer (70) may be removable and replaceable, whereby the sheet of porous material (60) can be replaced, and the photonic sensing device (20) can be re-used. Detection devices (810, 910) that include the biosensor (10), as well as methods of making and using the biosensor (10) are also disclosed.

[Continued on next page]

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

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))*