

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
19 August 2021 (19.08.2021)

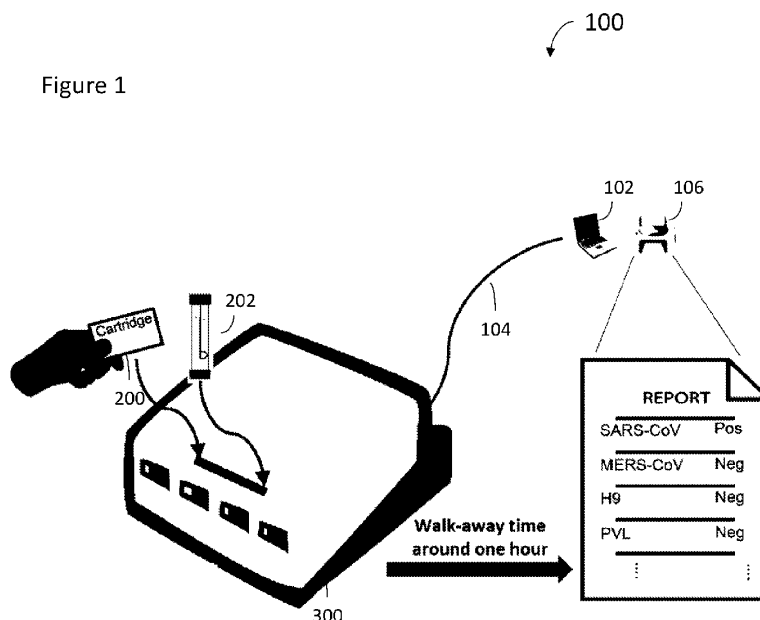


(10) International Publication Number  
**WO 2021/161171 A1**

- (51) **International Patent Classification:**  
*G01N 21/17* (2006.01) *G01N 15/14* (2006.01)
- (21) **International Application Number:**  
PCT/IB2021/051046
- (22) **International Filing Date:**  
10 February 2021 (10.02.2021)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
62/972,119 10 February 2020 (10.02.2020) US
- (72) **Inventors; and**
- (71) **Applicants:** TSANG, Yuk Lun [CN/CN]; Loeb & Loeb LLP, 21st Floor, CCB Tower, Hong Kong (CN). CHU, Lut Hey [CN/CN]; Loeb & Loeb LLP, 21st Floor, CCB Tower, Hong Kong (CN). LAU, Johnson Yiu-Nam [US/US]; 6230 Cedar Creek Drive, Houston, Texas 77057 (US). LAU, Lok Ting [CN/CN]; Loeb & Loeb LLP, 21st Floor, CCB Tower, Hong Kong (CN).
- (74) **Agent:** ARTHUR T. YUAN; Loeb & Loeb LLP, 21st Floor, CCB Tower, Hong Kong (CN).
- (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, IT, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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:** POINT-OF-CARE MICROFLUIDIC IN VITRO DIAGNOSTIC SYSTEM

Figure 1



(57) **Abstract:** A fully automated microfluidic system (100) for detecting multiple different analytes in a single run comprises: a remote computer system (102), a microfluidic analyzer (300) having an illumination source and a detection module; and a cartridge (200) having a plurality of lightbulbs (224), a sample tank (204) and at least one reagent tank (210), wherein each lightbulb (224) is sealable by the microfluidic analyzer (300).

WO 2021/161171 A1

[Continued on next page]

# WO 2021/161171 A1

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))*