

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 November 2020 (12.11.2020)



(10) International Publication Number
WO 2020/223802 A1

(51) International Patent Classification:

G01N 27/416 (2006.01) C12M 1/34 (2006.01)

(21) International Application Number:

PCT/CA2020/050593

(22) International Filing Date:

04 May 2020 (04.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/844,406 07 May 2019 (07.05.2019) US

(71) Applicant: **ROSHAN WATER SOLUTIONS INCORPORATED** [CA/CA]; 5042 Andison Close SW, Edmonton, Alberta T6W 3T4 (CA).

(72) Inventors: **SOHRABI, Amirreza**; c/o Roshan Water Solutions Incorporated, 5042 Andison Close SW, Edmonton, Alberta T6W 3T4 (CA). **SHAIBANI, Parmiss Mojir**; c/o Roshan Water Solutions Incorporated, 5042 Andison Close SW, Edmonton, Alberta T6W 3T4 (CA).

(74) Agent: **POLONENKO, Daniel R.** et al.; c/o Gowling WLG (Canada) LLP, Suite 1600, 421 - 7 Avenue SW, Calgary, Alberta T2P 4K9 (CA).

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

(54) Title: PORTABLE DEVICE AND SYSTEM FOR RAPID DETECTION OF A BACTERIAL CELL IN FLUID SAMPLES

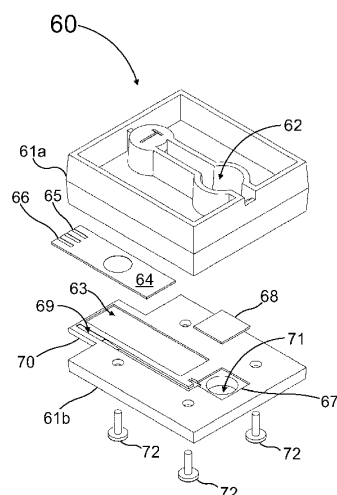


Fig. 5

(57) Abstract: A system for rapid analysis of a fluid sample for detection of at least one viable microbial organism therein. The system comprises a cartridge that is demountably engageable with a reader component. The cartridge has a first well receiving a fluid sample, with a second well and third well imbedded under portions of the first well. The second well has a sensor configured to send a reference signal to the reader component, while the third well has a sensor configured to send a sample signal to the reader component. When in use, the cartridge is engaged with the reader component and a fluid sample is placed into the first well. The reader component controllably illuminates the third well and comprises a detector that detects differences in photocurrent and/or spectra between the reference signal and the sample signal from the illuminated third well.

WO 2020/223802 A1

[Continued on next page]

Published:

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE