

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
19 January 2023 (19.01.2023)



(10) International Publication Number
WO 2023/287697 A1

(51) International Patent Classification:

G01N 15/14 (2006.01) G01N 15/10 (2006.01)
G01N 21/85 (2006.01)

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).

(21) International Application Number:

PCT/US2022/036663

(22) International Filing Date:

11 July 2022 (11.07.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/222,708 16 July 2021 (16.07.2021) US

(71) Applicant: **BECTON, DICKINSON AND COMPANY**
[US/US]; 1 Becton Drive, MC110, Franklin Lakes, New
Jersey 07417-1880 (US).

(72) Inventors: **BAI, Wenyu**; 740 Grandview Ter., San Jose,
California 95133 (US). **BHABAN, Shreyas**; 650 E Capitol
Ave., Apt. 389, San Jose, California 95035 (US). **MAGE,**
Peter; 5258 Kunkel Dr., San Jose, California 95124 (US).
OWSLEY, Keegan; 388 Virginia Ave., Campbell, Califor-
nia 95008 (US).

(74) Agent: **FIELD, Bret E.**; 201 Redwood Shores Parkway,
Suite 200, Redwood City, California 94065 (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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, 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,

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))

(54) Title: METHODS FOR DETERMINING PHOTODETECTOR GAIN-VOLTAGE USING OPTICAL SIGNALS

(57) Abstract: Aspects of the present disclosure include methods for determining photodetector gain for a plurality of photodetectors in a light detection system. Methods according to certain embodiments include applying a reference voltage to each photodetector in the light detection system, generating a reference data signal for each photodetector at the reference voltage, irradiating with a light source the photodetectors at a plurality of different applied voltages, generating output data signals for each photodetector at each of the plurality of different voltages and calculating gain of the photodetectors at each of the plurality of different applied voltages based on the output data signals for each photodetector at each applied voltage and the reference data signal. Systems (e.g., particle analyzers) having a light source and a light detection system that includes a plurality of photodetectors for practicing the subject methods are also described. Non-transitory computer readable storage medium are also provided.



WO 2023/287697 A1