

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
01 August 2019 (01.08.2019)



(10) International Publication Number  
**WO 2019/147475 A1**

- (51) **International Patent Classification:**  
*G01N 15/14* (2006.01) *G01N 21/47* (2006.01)
- (21) **International Application Number:**  
PCT/US2019/014068
- (22) **International Filing Date:**  
17 January 2019 (17.01.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
62/620,916 23 January 2018 (23.01.2018) US
- (71) **Applicant: BECTON, DICKINSON AND COMPANY**  
[US/US]; 1 Becton Drive, MC110, Franklin Lakes, New  
Jersey 07417-1880 (US).
- (72) **Inventors: OSBORNE, Geoffrey**; 129 Farnham Lane, Los  
Gatos, California 95032 (US). **CAO, Jianying**; 1215 Car-  
dona Way, San Jose, California 95131 (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, 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,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
KM, ML, MR, NE, SN, TD, TG).

(54) **Title:** SYSTEMS FOR DYNAMIC LIGHT DETECTION OBSCURATION AND METHODS FOR USING THEREOF

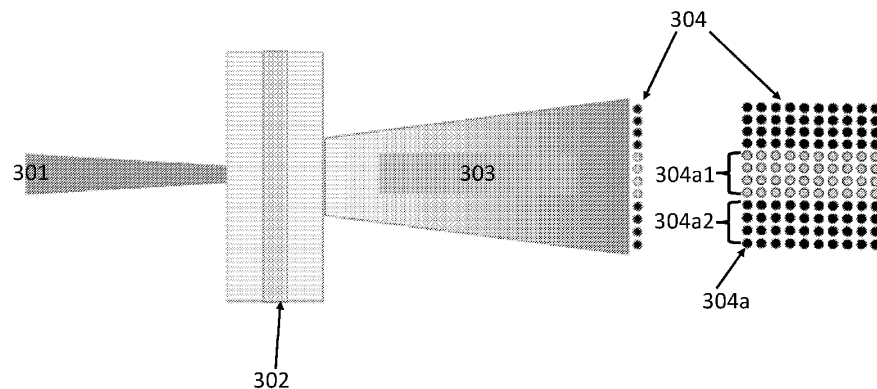


FIG. 3

(57) **Abstract:** Systems for differentially detecting light from a sample in a flow stream (e.g., in a flow cytometer) across one or more dimensions are described. Light detection systems according to embodiments include a flow cell configured to propagate a sample in a flow stream, a light source configured to irradiate the sample in the flow cell and a detector system having an optical adjustment component and a detector that is configured to differentially detect light from the flow cell without a scatter bar. Systems according to certain embodiments are configured to differentially detect light by modulating one or more components of the optical adjustment component or the detector. Methods for differentially detecting light from a sample in a flow stream with a detector unit without a scatter bar are also described. Kits having two or more components for use in the subject systems are also provided.

[Continued on next page]

**Published:**

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