

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
22 September 2022 (22.09.2022)



(10) International Publication Number
WO 2022/198206 A1

(51) International Patent Classification:

G01N 21/64 (2006.01) G02B 21/16 (2006.01)
G02B 21/00 (2006.01) G02B 21/36 (2006.01)

(21) International Application Number:

PCT/US2022/071164

(22) International Filing Date:

15 March 2022 (15.03.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/200,639 19 March 2021 (19.03.2021) US

(71) Applicant: **ILLUMINA, INC.** [US/US]; 5200 Illumina Way, San Diego, California 92122 (US).

(72) Inventors: **REN, Hongji**; 5200 Illumina Way, San Diego, California 92122 (US). **MOON, John**; 5200 Illumina Way, San Diego, California 92122 (US).

(74) Agent: **SODERBERG, J. Richard** et al.; BRAKE HUGHES BELLERMANN LLP, P.O. Box 1077, Middletown, Maryland 21769 (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, 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, 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).

Published:

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

(54) Title: PERFORMING STRUCTURED ILLUMINATION MICROSCOPY ON A PATTERNED SUBSTRATE

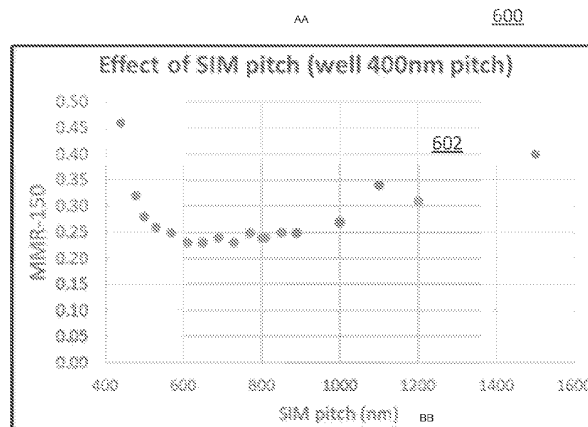


FIG. 6

(57) Abstract: A structured illumination microscopy (SIM) system comprises: a light source; a light-structuring component to provide light from the light source with a SIM pattern for performing illuminations of a sample at a substrate having a substrate pattern, wherein a pitch of the SIM pattern is based on a characteristic of the substrate pattern; and an image sensor to detect emissions that the sample generates in response to the illuminations.

WO 2022/198206 A1