

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
02 March 2023 (02.03.2023)



(10) International Publication Number  
**WO 2023/028227 A1**

(51) International Patent Classification:

G01J 3/45 (2006.01) H01J 49/42 (2006.01)  
H01J 49/00 (2006.01) G02B 5/30 (2006.01)  
H01J 49/06 (2006.01)

(72) Inventor: **MURPHY, Dominic**; Delaware Innovation Space, 200 Powder Mill Road, Bldg. E500, Wilmington, DE 19803 (US).

(74) Agent: **NORTON, Gerard, P.** et al.; Fox Rothschild LLP, 997 Lenox Drive, Lawrenceville, NJ 08648-2311 (US).

(21) International Application Number:

PCT/US2022/041521

(22) International Filing Date:

25 August 2022 (25.08.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/236,896 25 August 2021 (25.08.2021) US

(71) Applicant: **LAYER METRICS INC.** [US/US]; Delaware Innovation Space, 200 Powder Mill Road, Bldg. E500, Wilmington, DE 19803 (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.

(54) Title: SPECTROFILOMETER

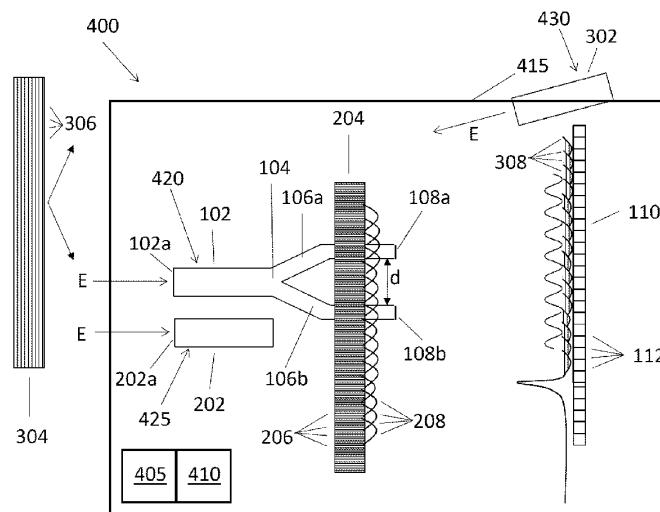


FIG. 4

(57) Abstract: Spectrofilometers are provided. The spectrofilometer includes a profilometer, an enclosure, one or more interferometer beam-splitting elements, and/or one or more spectrometer beam-dispersing elements. The one or more interferometer beam-splitting elements and the one or more spectrometer beam-dispersing elements are housed in the enclosure, share one or more radiation sensitive elements with the profilometer, which are arranged to generate a signal in response to incident electromagnetic radiation, and each generate one or more optical outputs. The one or more optical outputs are arranged such that respective optical axes intersect substantially in a plane of the one or more radiation sensitive elements.

[Continued on next page]

**(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))