

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 October 2023 (12.10.2023)



(10) International Publication Number
WO 2023/196079 A1

(51) International Patent Classification:

G01N 21/25 (2006.01) H01L 21/67 (2006.01)
G01B 11/06 (2006.01)

(21) International Application Number:

PCT/US2023/014974

(22) International Filing Date:

10 March 2023 (10.03.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17/715,866 07 April 2022 (07.04.2022) US

(71) Applicant: **APPLIED MATERIALS, INC.** [US/US];
3050 Bowers Avenue, Santa Clara, CA 95054 (US).

(72) Inventors: **LIN, Chuang-Chia**; 3036 Sonsilla Lane, San
Ramon, CA 94582 (US). **QIAO, Wenwei**; 1960 Lavender
Way, Gilroy, CA 95020 (US).

(74) Agent: **BERNADICOU, Michael, A.** et al.; Schwabe,
Williamson & Wyatt, P.C., 1211 SW 5th Avenue, Suite
1900, Portland, OR 97204 (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, 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, CV,
GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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: OPTICAL SPECTRUM SENSOR WAFER OR ROBOT FOR CHAMBER CONDITION MONITORING

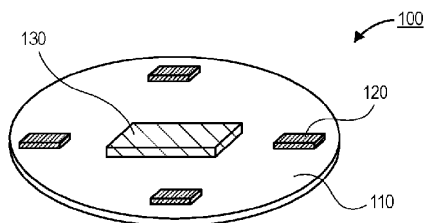


FIG. 1A

(57) Abstract: Embodiments disclosed herein include a diagnostic sub-
strate. In an embodiment, the diagnostic substrate comprises a substrate,
a circuit board on the substrate, and a spectrometer coupled to the cir-
cuit board. In an embodiment, the diagnostic substrate further compris-
es a processor on the circuit board and communicatively coupled to the
spectrometer.

WO 2023/196079 A1