

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 November 2020 (26.11.2020)



(10) International Publication Number
WO 2020/237016 A1

(51) International Patent Classification:

G01J 3/443 (2006.01) *H01J 37/32* (2006.01)
G01J 3/02 (2006.01) *H01L 21/66* (2006.01)
G01N 21/73 (2006.01) *G01N 21/17* (2006.01)
G01N 21/15 (2006.01) *G01N 21/84* (2006.01)

(21) International Application Number:

PCT/US2020/033939

(22) International Filing Date:

21 May 2020 (21.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/851,756 23 May 2019 (23.05.2019) US

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(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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: OPTICAL DIAGNOSTICS OF SEMICONDUCTOR PROCESS USING HYPERSPECTRAL IMAGING

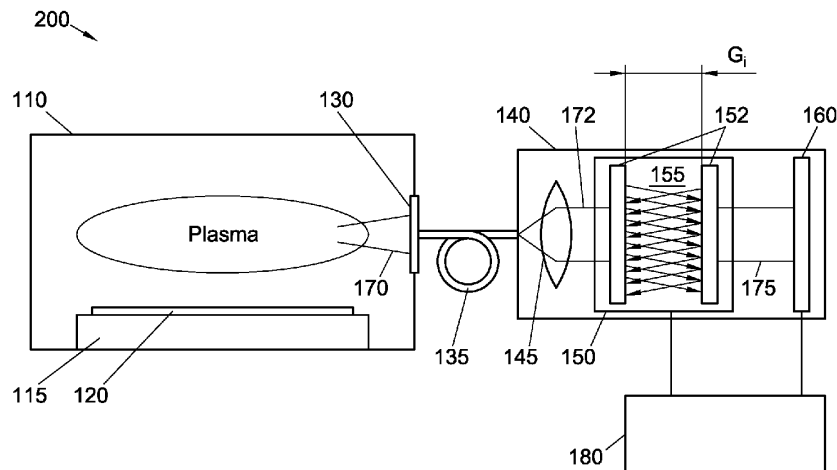


FIG. 1B

(57) Abstract: Disclosed are embodiments of an improved apparatus and system, and associated methods for optically diagnosing a semiconductor manufacturing process. A hyperspectral imaging system is used to acquire spectrally-resolved images of emissions from the plasma, in a plasma processing system. Acquired hyperspectral images may be used to determine the chemical composition of the plasma and the plasma process endpoint. Alternatively, a hyperspectral imaging system is used to acquire spectrally-resolved images of a substrate before, during, or after processing, to determine properties of the substrate or layers and features formed on the substrate, including whether a process endpoint has been reached; or before or after processing, for inspecting the substrate condition.

[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))*
- *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))*