



(51) International Patent Classification:
H01J 37/32 (2006.01) *H01L 21/67* (2006.01)

(21) International Application Number:
PCT/US2021/032446

(22) International Filing Date:
14 May 2021 (14.05.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
16/898,244 10 June 2020 (10.06.2020) US

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

(72) Inventors: **CHAN, Kelvin**; 1740 Blakesley Drive, San Ramon, CA 94582 (US). **KRAUS, Philip, Allan**; 1006 Broadway Avenue, San Jose, CA 95125 (US). **CHUA, Thai, Cheng**; 19351 Calle de Barcelona, Cupertino, CA 95014 (US). **NGUYEN, Hanh**; 3231 Lamond Court, San Jose, CA 95148 (US). **SUBRAMANI, Anantha**; 4245 Merlot Court, San Jose, CA 95135 (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, 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, 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).

(54) Title: CLEAN UNIT FOR CHAMBER EXHAUST CLEANING

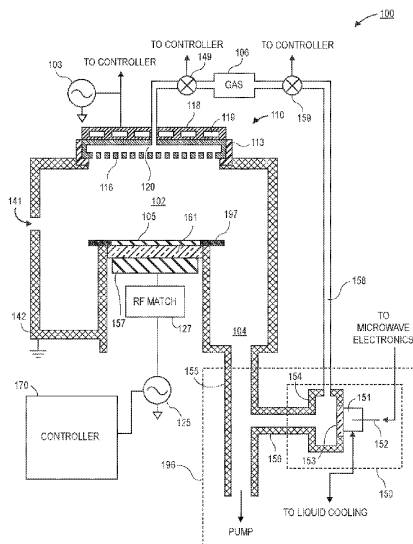


FIG. 1A

(57) Abstract: Embodiments disclosed herein include a cleaning module for the exhaust line of a chamber. In an embodiment, a mobile cleaning module comprises a chamber where the chamber comprises a first opening and a second opening. In an embodiment, the cleaning module further comprises a lid to seal the first opening. In an embodiment, the lid comprises a dielectric plate, a dielectric resonator coupled to the dielectric plate, a monopole antenna positioned in a hole into the dielectric resonator, and a conductive layer surrounding the dielectric resonator.

Published:

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