



(51) International Patent Classification:

C23C 16/448 (2006.01) C23C 16/52 (2006.01)
C23C 16/455 (2006.01) H01L 21/67 (2006.01)

(21) International Application Number:

PCT/US2024/048029

(22) International Filing Date:

23 September 2024 (23.09.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/585,015 25 September 2023 (25.09.2023) US

(71) Applicant: **LAM RESEARCH CORPORATION**
[US/US]; 4650 Cushing Parkway, Fremont, California
94538-6470 (US).

(72) Inventors: **SANKHE, Pratik**; c/o Lam Research Corporation, 4650 Cushing Parkway, Fremont, California 94538-6470 (US). **DRAPER, Emile Charles**; c/o Lam Research Corporation, 4650 Cushing Parkway, Fremont, California 94538-6470 (US). **CHEN, Philip**; c/o Lam Research Corporation, 4650 Cushing Parkway, Fremont, California 94538-6470 (US). **JANZEN, Lewis Vernon Mili-**
no; c/o Lam Research Corporation, 4650 Cushing Park-

way, Fremont, California 94538-6470 (US). **ROGERS, Jacob William**; c/o Lam Research Corporation, 4650 Cushing Parkway, Fremont, California 94538-6470 (US). **BAMFORD, Thadeous**; c/o Lam Research Corporation, 4650 Cushing Parkway, Fremont, California 94538-6470 (US).

(74) Agent: **SCHEER, Bradley W.** et al.; Schwegman Lundberg & Woessner, P.A., P.O. Box 2938, Minneapolis, Minnesota 55402 (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, MU, 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,

(54) Title: RECONFIGURABLE ADVANCED MODULAR PRECURSOR DELIVERY SYSTEM (AMPDS)

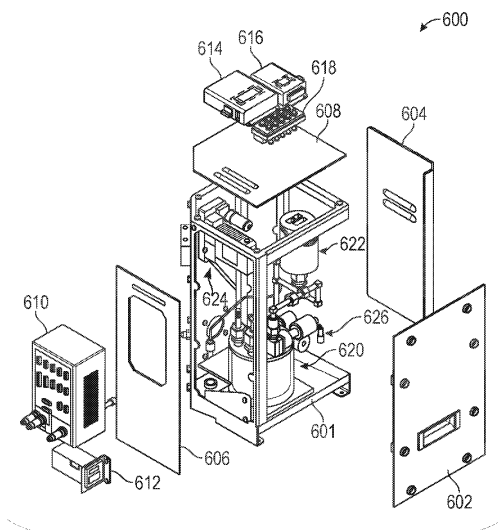


FIG. 6

(57) Abstract: A precursor delivery apparatus includes a frame with a plurality of openings, a container with a precursor, and a plurality of interchangeable side panels. The container is mounted within an internal volume formed by the frame. Each of the plurality of interchangeable side panels is removably secured to the frame to cover a corresponding opening of the plurality of openings. At least one of the plurality of interchangeable side panels is configurable based on the precursor type associated with the precursor.

[Continued on next page]

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))