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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
02 October 2025 (02.10.2025)

WIPO | PCT

(10) International Publication Number
WO 2025/207740 A1

(51) International Patent Classification:
*H01L 21/687* (2006.01) *C23C 14/50* (2006.01)
*C23C 16/458* (2006.01)

(21) International Application Number:
PCT/US2025/021498

(22) International Filing Date:
26 March 2025 (26.03.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/618,956 27 March 2024 (27.03.2024) US

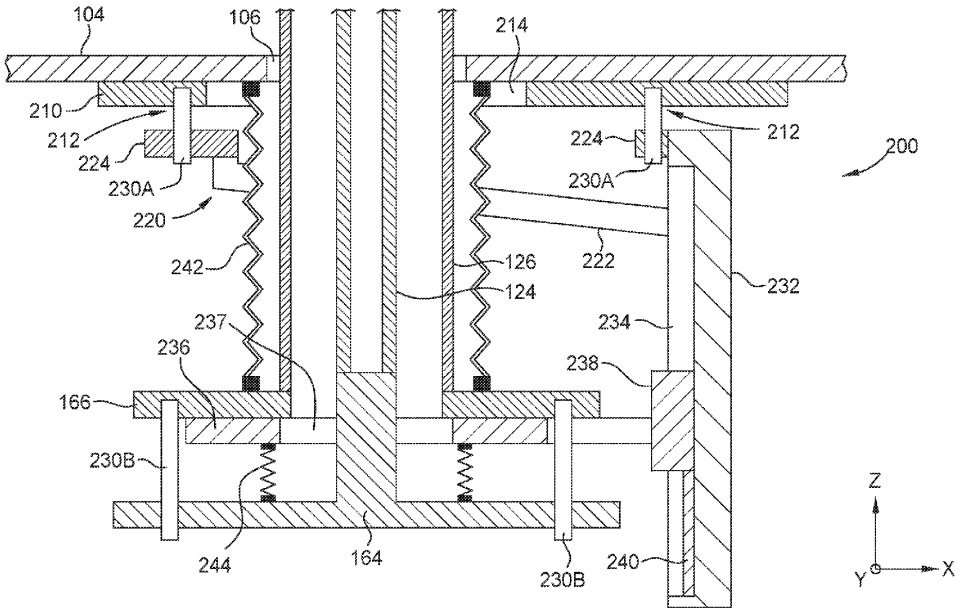
(71) Applicant: **APPLIED MATERIALS, INC.** [US/US]; 3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **ALAYAVALLI, Kaushik**; c/o Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, California 95054 (US). **HATTANGADI, Amit**; c/o Applied Materials India Private Limited;, Unit 5, 3rd Fl., Explorer Bldg., Whitefield Rd., Bangalore 560066 (IN). **BASAVARAJAIAH SOMASHEKAR, Vishwas**; c/o Applied Materials India Private Limited;, Unit 5, 3rd Fl., Explorer Bldg., Whitefield Rd., Bangalore 560066 (IN). **SOMANAHALLI MALLESHAPPA, Chethan**; c/o Applied Materials India Private Limited;, Unit 5, 3rd Fl., Explorer Bldg., Whitefield Rd., Bangalore 560066 (IN). **LINDENBERG, Ralph**; c/o Applied Materials GmbH & Co. KG, Siemensstrasse 100, 63755 Alzenau (DE). **PALANISAMY, Selvaprakash**; c/o Applied Materials India Private Limited;, Unit 5, 3rd Fl., Explorer Bldg., Whitefield Rd., Bangalore 560066 (IN).

(74) Agent: **DOUGHERTY, Chad M.** et al.; PATTERSON + SHERIDAN LLP, 24 Greenway Plaza, Suite 1600, Houston, Texas 77046 (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,

(54) Title: LEVELING SYSTEMS AND METHODS




(57) Abstract: A substrate support of a processing chamber includes a support plate and a seal plate. The processing chamber includes a leveling system configured to raise and lower the support plate and the seal plate. The leveling system is configured to alter an orientation of the seal plate with respect to a chamber component, such as a liner assembly. The leveling system is configured to alter an orientation of the support plate with respect to a chamber component, such as a showerhead.

[Continued on next page]

WO 2025/207740 A1

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, UY, 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))*