(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 2025/207504 A1

(51) International Patent Classification:
H01L 21/683 (2006.01) *H02N 13/00* (2006.01)
C23C 16/505 (2006.01) *B23Q 3/15* (2006.01)

(21) International Application Number:
PCT/US2025/021123

(22) International Filing Date:
24 March 2025 (24.03.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/617,274 26 March 2024 (26.03.2024) 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, 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, 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))*

(54) **Title:** CHUCKING SENSOR USING FLOATING ESC POWER SUPPLIES

(57) **Abstract:** Electrostatic chucks (ESCs) are used to provide a clamping force between the substrate and the pedestal during semiconductor processes. However, it is difficult to measure a chucking state of the substrate during a live process, as this usually requires invasive measurements or additional hardware to be added to the pedestal. A new technique for monitoring a chucking state electrically isolates the ESC from the system ground to create a single conductive path through the ESC power supplies, ESC electrodes, and the substrate. A floating voltage between the two power supplies may change with the chucking state of the substrate, and this voltage may be monitored to determine the real-time chucking state of the substrate. This provides an unintrusive way to monitor the ESC state in real-time during a semiconductor process at the controller without disturbing the process or modifying the pedestal.

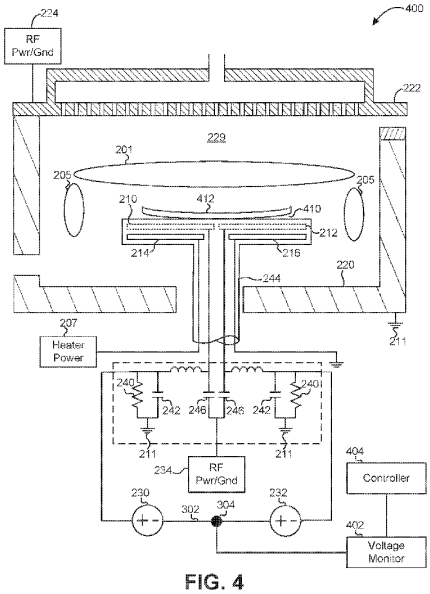


FIG. 4

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