(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 2025/207494 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/US2025/021107

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

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/617,280 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,

(54) Title: ARC REDUCTION USING UNREFERENCED FLOATING POWER SUPPLIES

(57) Abstract: Electrostatic chucks are used to provide a clamping force between the substrate and the pedestal during semiconductor processes. However, charge buildup on the chuck electrodes and/or the substrate may cause damaging current arcs to occur as excess charge finds new pathways to the system ground. This technology uses floating power sources for the electrostatic chuck that are electrically isolated from the system ground. The power sources for the positive and negative electrodes in the pedestal may be connected together, and the typical ground connection between the power supplies can be removed. Floating and connected power supplies create a single current path that balances current between the two electrodes and eliminates free current paths to the system ground. This greatly reduces the likelihood of current arcs from the electrostatic chuck.

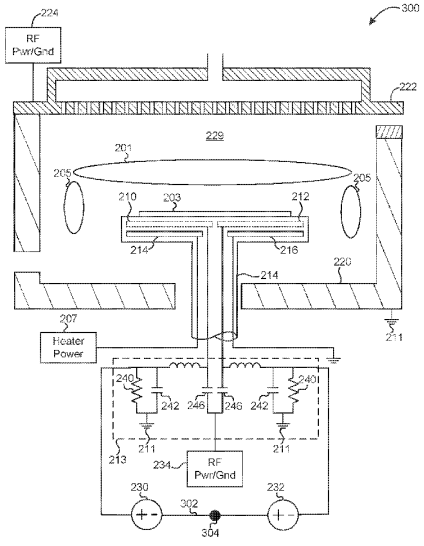


FIG. 3

[Continued on next page]

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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))*