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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 November 2003 (20.11.2003)

PCT

(10) International Publication Number
WO 03/096765 A2

(51) International Patent Classification[7]: H05H 1/00

(21) International Application Number: PCT/US03/13597

(22) International Filing Date: 1 May 2003 (01.05.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/140,618 6 May 2002 (06.05.2002) US

(71) Applicant *(for all designated States except US)*: **LAM RESEARCH CORPORATION** [US/US]; Re: P935, 4650 Cushing Parkway, Fremont, CA 94538-6470 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **HOWALD, Arthur, M.** [US/US]; 4233 Cabernet Court, Pleasanton, CA 94566 (US). **KUTHI, Andras** [US/US]; 717 Pamela Wood Street, Thousand Oaks, CA 91320 (US). **BAILEY, Andrew, D., III** [US/US]; 5167 Northway Road, Pleasanton, CA 94566 (US). **BERNEY, Butch** [US/US]; 8045 Regency Drive, Pleasanton, CA 94588 (US).

(74) Agent: **NGUYEN, Joseph, A.**; IPSG, P.C., 10121 Miller Avenue, Suite 201, Cupertino, CA 95014-3469 (US).

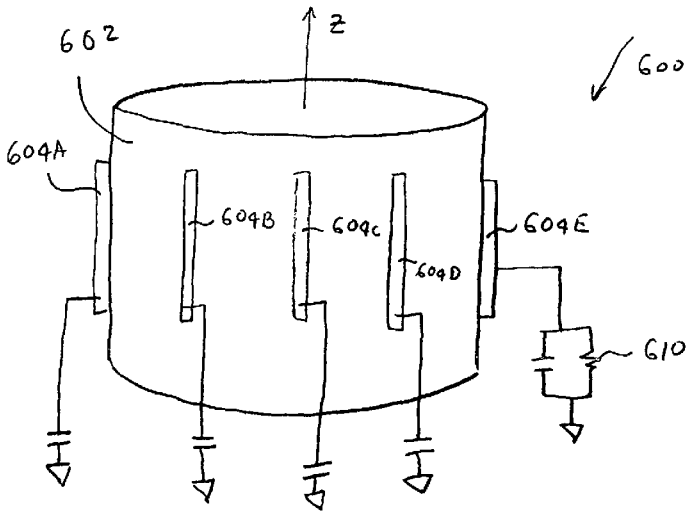
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHODS FOR MINIMIZING ARCING IN A PLASMA PROCESSING CHAMBER



(57) Abstract: A plasma processing chamber for processing a substrate to form electronic components thereon is disclosed. The plasma processing chamber includes a plasma-facing component having a plasma-facing surface oriented toward plasma in the plasma processing chamber during processing of the substrate, the plasma-facing component being electrically isolated from a ground terminal. The plasma processing chamber further includes a grounding arrangement coupled to the plasma-facing component, the grounding arrangement including a first resistance circuit disposed in a first current path between the plasma-facing component and the ground terminal. The grounding arrangement further includes a RF filter arrangement disposed in at least one other current path between the plasma-facing component and the ground terminal, wherein a resistance value of the first resistance circuit is selected to substantially eliminate arcing between the plasma and the plasma-facing component during the processing of the substrate.

WO 03/096765 A2