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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094244 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/US2004/043911

(22) International Filing Date:
30 December 2004 (30.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/802,460 16 March 2004 (16.03.2004) US

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

(72) Inventors; and

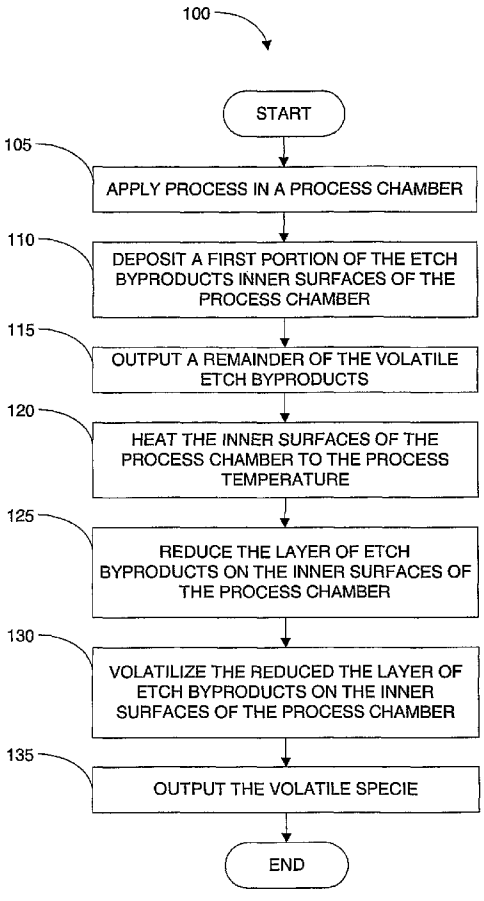
(75) Inventors/Applicants *(for US only)*: **BAILEY, Andrew, D., III** [US/US]; 5167 Northway Road, Pleasanton, CA 94566 (US). **LOHOKARE, Shrikant, P.** [IN/US]; 35141 Woodbridge Place, Fremont, CA 94536 (US). **HOWALD, Arthur, M.** [US/US]; 4233 Cabernet Court, Pleasanton, CA 94566 (US). **KIM, Yunsang** [KR/US]; 3648 Gleason Avenue, San Jose, CA 95130 (US).

(74) Agent: **LEAVELL, George, B.**; Martine, Penilla & Gencarella, LLP, 710 Lakeway Drive, Suite 200, Sunnyvale, CA 94085 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: SYSTEM, METHOD AND APPARATUS FOR SELF-CLEANING DRY ETCH



(57) Abstract: A method for cleaning a processing chamber that includes heating an inner surface of the processing chamber to a first temperature. The first temperature can be sufficient to cause a first species to become volatile. The first species can be one of several species deposited on the inner surface. A cleaning chemistry is injected into the processing chamber. The cleaning chemistry can be reactive with a second one of the species to convert the second species to the first species. The volatilized first species can also be output from the processing chamber. A system for cleaning the process chamber is also described.

WO 2005/094244 A2

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (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.