

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 February 2006 (02.02.2006)

PCT

(10) International Publication Number
WO 2006/012174 A3

(51) International Patent Classification:

H01L 21/461 (2006.01) **B08B 7/04** (2006.01)
H01L 27/01 (2006.01) **C23C 14/00** (2006.01)

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

(21) International Application Number:

PCT/US2005/022172

(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, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, 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.

(22) International Filing Date: 23 June 2005 (23.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

10/880,007 28 June 2004 (28.06.2004) US

(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).

(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*): **KOROLIK, Mikhail** [RU/US]; 1751 Wayne Circle, San Jose, CA 95131 (US). **BOYD, John M.** [CA/US]; 8730 Sierra Vista Road, Atascadero, CA 93422 (US). **MIKHAYLICH, Katrina** [RU/US]; 1751 Wayne Circle, San Jose, CA 95131 (US). **RAVKIN, Michael** [US/US]; 1215 W. Knickerbocker Drive, Sunnyvale, CA 94087 (US). **REDEKER, Fred, C.** [US/US]; 1801 Sioux Drive, Fremont, CA 94539 (US). **DE LARIOS, John, M.** [US/US]; 941 Loma Verde, Palo Alto, CA 94303 (US).

Published:

— with international search report

(88) Date of publication of the international search report:

14 September 2006

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: SYSTEM AND METHOD OF CLEANING AND ETCHING A SUBSTRATE

(57) Abstract: One embodiment provides a method of processing a substrate. The method includes applying a solution to a surface of a substrate. At least one reacting species has been produced by dissociation of the solution by applying energy such as a light to the solution. A first material on the substrate is reacted and removing the reacted first material. A system for processing a substrate is also described.



WO 2006/012174 A3