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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/060548 A3

(51) International Patent Classification[7]: H01L 21/4763, 21/44

(21) International Application Number:
PCT/US2004/040267

(22) International Filing Date:
1 December 2004 (01.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/738,280 16 December 2003 (16.12.2003) US

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

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **ANNAPRAGADA, Rao** [IN/US]; 34268 Pinnacles Drive, Union City, CA 94587 (US). **TAKESHITA, Kenji** [JP/US]; 4237 Garland Drive, Fremont, CA 94536 (US).

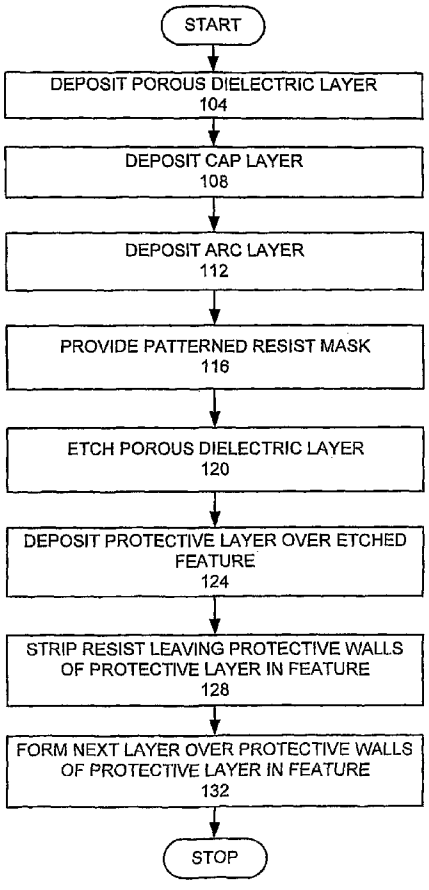
(74) Agent: **LEE, Michael, B.**; Beyer Weaver & Thomas, LLP, P.O. Box 70250, Oakland, CA 94612-0250 (US).

(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, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(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).

[Continued on next page]

(54) Title: METHOD OF PREVENTING DAMAGE TO POROUS LOW-K MATERIALS DURING RESIST STRIPPING



(57) Abstract: A method of forming a feature in a porous low-K dielectric layer is provided. A porous low-K dielectric layer is placed over a substrate. A patterned photoresist mask is placed over the porous low-K dielectric layer. A feature is etched into the porous low-K dielectric layer. A protective layer is deposited over the feature after the etching the feature. The patterned photoresist mask is stripped, so that part of the protective layer is removed, where protective walls formed from the protective layer remain in the feature.

WO 2005/060548 A3

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
23 February 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.