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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 June 2011 (16.06.2011)

PCT

(10) International Publication Number
WO 2011/072268 A1

(51) **International Patent Classification**:
H01L 21/00 (2006.01)

(21) **International Application Number**:
PCT/US2010/059966

(22) **International Filing Date**:
10 December 2010 (10.12.2010)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/285,950 11 December 2009 (11.12.2009) 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)*: **WANG, Yaxin** [US/US]; 44224 Ibero Way, Fremont, CA 94539 (US). **LI, Shijian** [US/US]; 1202 Donington Drive, San Jose, CA 95129 (US). **REDEKER, Fritz** [US/US]; 1801 Sioux Drive, Fremont, CA 94539 (US). **PARKS, John** [US/US]; 4650 Cushing Parkway, Fremont, CA 94538 (US). **KOLICS, Artur** [—/US]; 10739 Dulsie Lane, Dublin, CA 94568 (US). **YOON, Hyungsuk, Alexander** [US/US]; 6505 Hirabayshi Drive, San Jose, CA 95120 (US). **DE FILIPE, Tarek, Suwwan** [RU/US]; 4650 Cushing Drive, Fremont, CA 94538 (US). **KOROLIK, Mikhail** [US/US]; 1818 Fumia Place, San Jose, CA 95131 (US).

(74) **Agent**: **PENILLA, Alberts, S.**; 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, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

(54) **Title**: PROCESS TO KEEP SUBSTRATE SURFACE WET DURING PLATING

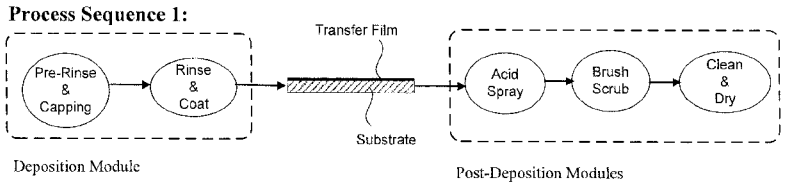


FIG. 4A

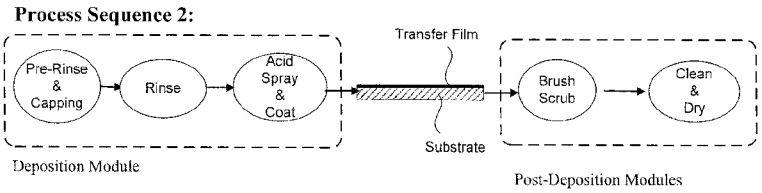


FIG. 4B

(57) **Abstract**: Methods and systems for handling a substrate through processes including an integrated electroless deposition process includes processing a surface of the substrate in an electroless deposition module to deposit a layer over conductive features of the substrate using a deposition fluid. The surface of the substrate is then rinsed in the electroless deposition module with a rinsing fluid. The rinsing is controlled to prevent de-wetting of the surface so that a transfer film defined from the rinsing fluid remains coated over the surface of the substrate. The substrate is removed from the electroless deposition module while maintaining the transfer film over the surface of the substrate. The transfer film over the surface of the substrate prevents drying of the surface of the substrate so that the removing is wet. The substrate, once removed from the electroless deposition module, is moved into a post-deposition module while maintaining the transfer film over the surface of the substrate.

WO 2011/072268 A1