

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 March 2011 (24.03.2011)

(10) International Publication Number
WO 2011/034897 A2

PCT

(51) International Patent Classification:
H01L 21/48 (2006.01) *C09D 125/12* (2006.01)
C08J 5/18 (2006.01)

(21) International Application Number:
PCT/US2010/048899

(22) International Filing Date:
15 September 2010 (15.09.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/242,846 16 September 2009 (16.09.2009) US

(71) Applicant (for all designated States except US): **BREWER SCIENCE INC.** [US/US]; 2401 Brewer Drive, Rolla, MO 65401 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YESS, Kimberly, A.** [US/US]; 528 Walters Street, St. James, MO 65559 (US). **DAILY, Madison, M., Jr.** [US/US]; 654 Holmes Lane, Rolla, MO 65401 (US). **FLAIM, Tony, D.** [US/US]; 16710 Mo. Hwy 68, St. James, MO 65559 (US).

(74) Agent: **BORNMAN, Tracy, L.**; Hovey Williams LLP, 10801 Mastin Blvd. Suite 1000, 84 Corporate Woods, Overland Park, KS 66210 (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, SE, SI, SK, SM, 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 (Rule 48.2(g))

(54) Title: SCRATCH-RESISTANT COATINGS FOR PROTECTING FRONT-SIDE CIRCUITRY DURING BACKSIDE PROCESSING

(57) Abstract: Scratch-resistant coatings for protecting front-side microelectromechanical and semiconductor device features during backside processing are provided, along with methods of using the same. The coatings are non-photosensitive, removable, and tolerate high processing temperatures. These coatings also eliminate the need for a separate etch stop layer in the device design. The coatings are formed from a composition comprising a component dissolved or dispersed in a solvent system. The component is selected from the group consisting of styrene-acrylonitrile copolymers and aromatic sulfone polymers.



WO 2011/034897 A2