

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
4 October 2007 (04.10.2007)

PCT

(10) International Publication Number
WO 2007/110773 A3(51) International Patent Classification:
G03F 7/027 (2006.01) *G03F 7/033* (2006.01)(21) International Application Number:
PCT/IB2007/000899

(22) International Filing Date: 28 March 2007 (28.03.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/390,716 28 March 2006 (28.03.2006) US(71) Applicant: **AZ ELECTRONIC MATERIALS USA CORP.** [US/US]; 70 Meister Avenue, Somerville, NJ 08876 (US).(72) Inventors: **PAWLOWSKI, Georg**; 278 Marcia Way, Bridgewater, NJ 08807 (US). **CHEN, Chunwei**; 906 Porter Way West, Bridgewater, NJ 08807 (US). **OBERLANDER, Joseph**; 31 Wexford Court, Phillipsburg, NJ 08865 (US). **PLASS, Robert**; 700 Mill Street, 19, Belleville, NJ 07109 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, 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, 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, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, 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, LV, MC, MT, 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).

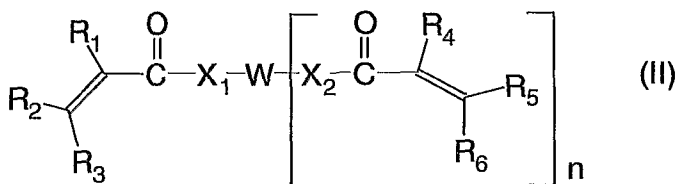
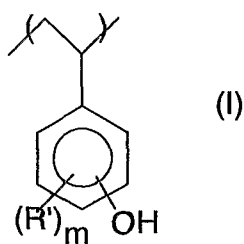
Published:

- 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:
10 January 2008

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: NEGATIVE PHOTORESIST COMPOSITIONS



(57) Abstract: The present invention relates to a negative photoresist composition comprising, a) at least one alkali-soluble polymer, where the polymer comprises at least one unit of structure (I), where, R' is selected independently from hydrogen, (C₁-C₄)alkyl, chlorine, bromine and m is an integer from 1 to 4; b) at least one monomer of structure (II), where, W is a multivalent linking group, R₁ to R₆ are independently selected from hydrogen, hydroxyl, (C₁-C₂₀) alkyl and chlorine, X₁ and X₂ are independently oxygen or N-R₇, where R₇ is hydrogen or (C₁-C₂₀) alkyl, and n is an integer equal to or greater than 1, and c) at least one photoinitiator. The invention also relates to a process for imaging the negative photoresist composition.