



(51) International Patent Classification:

G02B 1/04 (2006.01) **G03F 7/09** (2006.01)
G02B 1/10 (2006.01) **G03F 7/004** (2006.01)

(21) International Application Number:

PCT/IB2011/001229

(22) International Filing Date:

1 June 2011 (01.06.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/792,994 3 June 2010 (03.06.2010) US

(71) Applicant: **AZ ELECTRONIC MATERIALS USA CORP.** [US/US]; 70 Meister Avenue, Somerville, NJ 08876 (US).(72) Inventors: **YAO, Huirong**; 45 Madison Drive, Plainsboro, NJ 08536 (US). **YIN, Jian**; 36 Francis Drive, Bridgewater, NJ 08807 (US). **LIN, Guanyang**; 97 Violet Court, Whitehouse Station, NJ 08889 (US). **NEISSER, Mark, O.**; 12 Indian Purchase, Whitehouse Station, NJ 08889 (US). **ABDALLAH, David, J.**; 559 Sentinel Road, Moorestown, NJ 08057 (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, 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))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: ANTIREFLECTIVE COATING COMPOSITION AND PROCESS FOR MANUFACTURING MICROELECTRONIC DEVICE

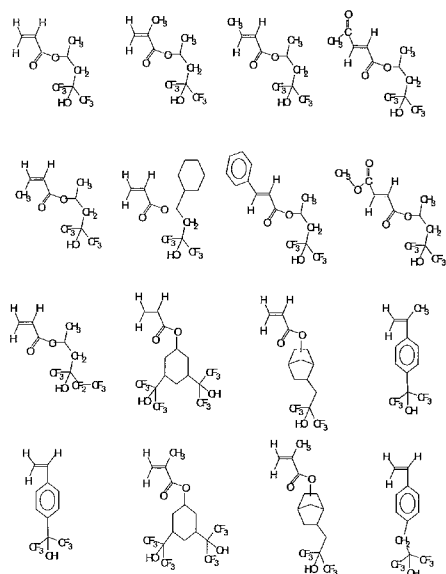


Figure 1: Examples of monomers for P1

(57) Abstract: The invention relates to an antireflective coating comprising a mixture of a first polymer and a second polymer, and a thermal acid generator, where the first polymer comprises at least one fluoroalcohol moiety, at least one aliphatic hydroxyl moiety, and at least one acid moiety other than fluoroalcohol with a pKa in the range of about 8 to about 11; where the second polymer is a reaction product of an aminoplast compound with a compound comprising at least one hydroxyl and/or at least one acid group. The invention further relates to a process for using the novel composition to form an image.