

(51) International Patent Classification:
C08L 65/00 (2006.01)(21) International Application Number:
PCT/US2012/046981(22) International Filing Date:
16 July 2012 (16.07.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/507,685 14 July 2011 (14.07.2011) US
61/548,832 19 October 2011 (19.10.2011) US(71) Applicants (for all designated States except US): **SUM-ITOMO BAKELITE CO., LTD.** [JP/JP]; 5-8 Higashi-shinagawa, 2-chome Shinagawa-ku, Tokyo, 140-0002 (JP). **PROMERUS LLC** [US/US]; 9921 Breckville Road, Brecksville, OH 44141 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ONISHI, Osamu** [JP/JP]; 5-8 Higashi-shinagawa, 2-chome Shinagawa-ku, Tokyo, 140-0002 (JP). **IKEDA, Haruo** [JP/JP]; 5-8 Higashi-shinagawa, 2-chome Shinagawa-ku, Tokyo, 140-0002 (JP). **TAGASHIRA, Nobuo** [JP/JP]; 5-8 Higashi-shinagawa, 2-chome Shinagawa-ku, Tokyo, 140-0002 (JP). **RHODES, Larry** [US/US]; 3036 Vincent Road, Silver Lake, OH 44224 (US). **KANDANARACHCHI, Pramod** [CA/US]; 7205 W. Cross Creek Trail, Breckville, OH 44141 (US).(74) Agent: **BERMAN, Bernard**; Promerus LLC, 9921 Brecksville Road, Brecksville, OH 44141 (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, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

[Continued on next page]

(54) Title: POLYMER AND COMPOSITIONS THEREOF FOR FORMING PATTERNED LAYERS AFTER IMAGE -WISE EXPOSURE TO ACTINIC RADIATION

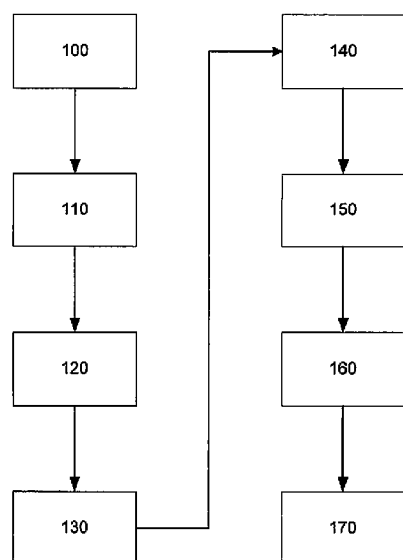


Fig 1

(57) Abstract: Copolymers and compositions thereof useful for forming self-imageable films encompassing such copolymers are disclosed. Such copolymers encompass norbornene-type repeating units and maleic anhydride-type repeating units where at least some of such and maleic anhydride-type repeating units have been ring-opened. The films formed from such copolymer compositions provide self imageable, low-k, thermally stable layers for use in microelectronic and optoelectronic devices.



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).

— *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))*

(88) Date of publication of the international search report:

6 June 2013

Published:

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