

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 December 2009 (17.12.2009)

(10) International Publication Number
WO 2009/151978 A1

(51) International Patent Classification:
H01L 51/40 (2006.01)

3M Center, Post Office Box 33427, Saint Paul, MN
55133-3427 (US).

(21) International Application Number:
PCT/US2009/045571

(74) Agents: **LOWN, Jean, A.** et al.; 3M Center, Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

(22) International Filing Date:
29 May 2009 (29.05.2009)

(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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/060,595 11 June 2008 (11.06.2008) US

(71) Applicant (for all designated States except US): **3M INNOVATIVE PROPERTIES COMPANY** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

(72) Inventors; and

(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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR),

(75) Inventors/Applicants (for US only): **CLOUGH, Robert, S.** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **REDINGER, David, H.** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **NOVACK, James, C.** [US/US];

[Continued on next page]

(54) Title: MIXED SOLVENT SYSTEMS FOR DEPOSITION OF ORGANIC SEMICONDUCTORS

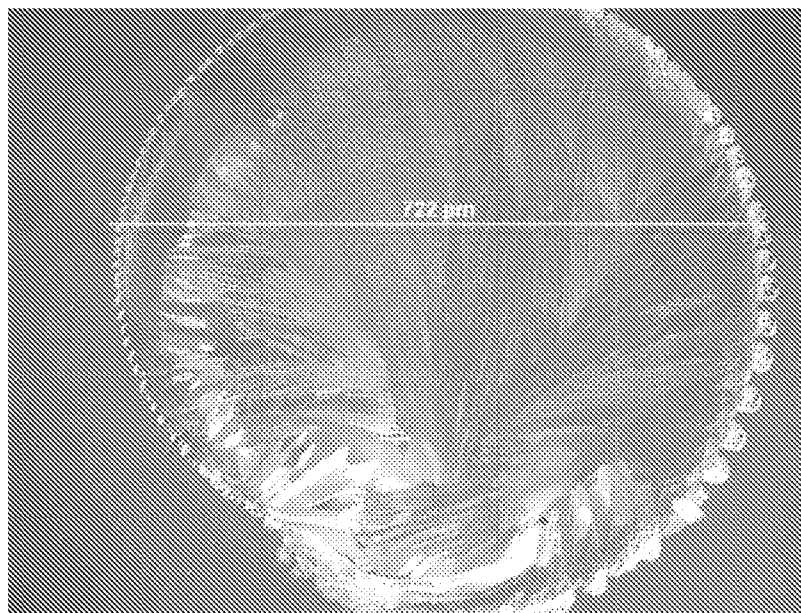


Fig. 3

(57) Abstract: Compositions that contain an organic semiconductor dissolved in a solvent mixture are described. More specifically, the solvent mixture includes an alkane having 9 to 16 carbon atoms in an amount equal to 1 to 20 weight percent and an aromatic compound in an amount equal to 80 to 99 weight percent. The semiconductor material is dissolved in the solvent mixture in an amount equal to at least 0.1 weight percent based on a total weight of the composition. Methods of making a semiconductor device using the compositions to form a semiconductor layer are also described.

WO 2009/151978 A1



OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG).

— *as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))*

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))*

Published:

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