

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 November 2007 (01.11.2007)

PCT

(10) International Publication Number
WO 2007/124286 A1

(51) International Patent Classification:

H01L 29/786 (2006.01) **C08G 81/00** (2006.01)
C08G 61/12 (2006.01)

(21) International Application Number:

PCT/US2007/066622

(22) International Filing Date: 13 April 2007 (13.04.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/379,662 21 April 2006 (21.04.2006) US

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

(72) Inventors: **ZHU, Peiwan**; 3M Center, Post Office Box
33427, Saint Paul, Minnesota 55133-3427 (US). **VOGEL,**
Dennis E.; 3M Center, Post Office Box 33427, Saint Paul,
Minnesota 55133-3427 (US). **LEE, Tzu-chen**; 3M Center,
Post Office Box 33427, Saint Paul, Minnesota 55133-3427
(US). **GERLACH, Christopher P.**; 3M Center, Post Of-
fice Box 33427, Saint Paul, Minnesota 55133-3427 (US).

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

Declarations under Rule 4.17:

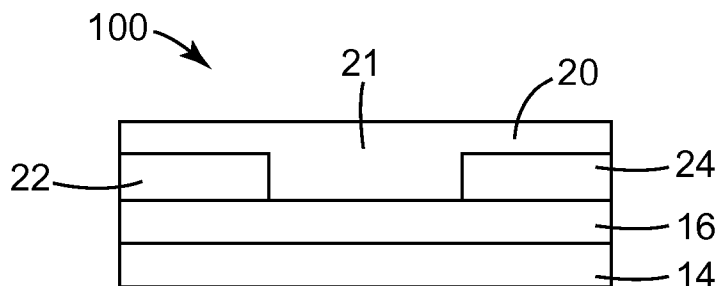
- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))

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

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC DEVICES CONTAINING ACENE-THIOPHENE COPOLYMERS WITH SILYLETHYNYL GROUPS



(57) Abstract: Electronic devices that include
an acene-thiophene copolymer and methods of
making such electronic devices are described.
More specifically, the acene-thiophene
copolymer has attached silylethynyl groups.
The copolymer can be used, for example, in
a semiconductor layer or in a layer positioned
between a first electrode and a second electrode.

WO 2007/124286 A1