

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 April 2006 (06.04.2006)

PCT

(10) International Publication Number
WO 2006/036756 A3

(51) International Patent Classification:
H01L 51/05 (2006.01)

(21) International Application Number:
PCT/US2005/034043

(22) International Filing Date:
26 September 2005 (26.09.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/612,641 24 September 2004 (24.09.2004) US

(71) Applicant (for all designated States except US): **PLEX-TRONICS, INC.** [US/US]; 2180 William Pitt Way, Pittsburgh, PA 15238 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HAMMOND, Troy, D.** [US/US]; 33 Wood Duck Trail, Pittsburgh, PA 15238 (US). **LAIRD, Darin, W.** [US/US]; 726 Orchid Hill Drive, Pittsburgh, PA 15238 (US). **WILLIAMS, Shawn, P.** [US/US]; 4024 Ludwick Street, Pittsburgh, PA 15217 (US). **HANNAH, Andrew, W.** [US/US]; 102 Linksview Drive, McMurray, PA 15317 (US). **SHEINA, Elena, E.** [KZ/US]; 1117 Pocono Street, Pittsburgh, PA 15218 (US). **JIA, Shijun** [CN/US]; 1115 Rural Ridge Drive, Cheswick, PA 15024 (US).

(74) Agents: **MAEBIUS, Stephen, B.** et al.; Foley & Lardner LLP, Washington Harbour, 3000 K Street, N.W., Suite 500, Washington, DC 20007-5143 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, 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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, 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).

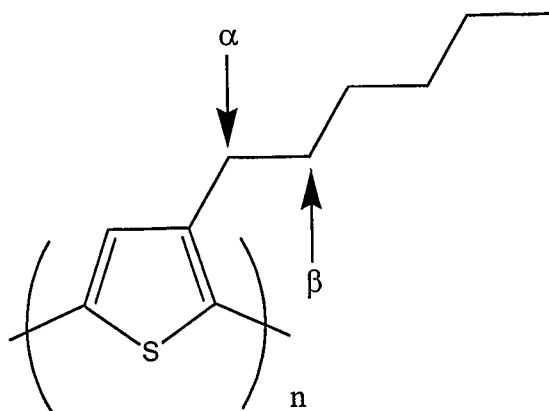
Published:

— with international search report

(88) Date of publication of the international search report:
2 November 2006

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: HETEROATOMIC REGIOREGULAR POLY(3-SUBSTITUTEDTHIOPHENES) IN PHOTOVOLTAIC CELLS



(57) Abstract: Regioregular polythiophene polymers can be used in photovoltaic applications including copolymers and blends. The polymer can comprise heteroatoms in the side groups. Better efficiencies can be achieved.

WO 2006/036756 A3