



(51) International Patent Classification:

C07D 285/14 (2006.01) **C07D 417/04** (2006.01)
C07D 487/04 (2006.01) **H01L 51/00** (2006.01)
H01L 51/54 (2006.01)

(21) International Application Number:

PCT/SG2009/000393

(22) International Filing Date:

22 October 2009 (22.10.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(71) **Applicant** (for all designated States except US): **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10, Connexis, Singapore 138632 (SG).

(72) **Inventors; and**

(75) **Inventors/Applicants** (for US only): **SONAR, Prashant** [IN/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG). **SHIN KOY SIEN, Richard Yee Cheong** [MR/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG). **CHEN, Zhikuan** [CN/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG). **ONG, Kok Haw** [SG/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG). **NG, Ging Meng** [MY/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG). **ZEN,**

Achmad [ID/SG]; Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602 (SG).

(74) **Agent:** **YU SARN AUDREY & PARTNERS**; 17 Upper Circular Road, #03-00 Jura Building, Singapore 058415 (SG).

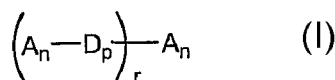
(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, 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, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, 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))

(54) **Title:** N-TYPE MATERIALS AND ORGANIC ELECTRONIC DEVICES



(57) **Abstract:** The invention provides organic compounds of formula I, wherein each A is an independently selected conjugated electron withdrawing aromatic or heteroaromatic group; each D is an independently selected ethynylene group, ethynylene group or a conjugated electron donating aromatic or heteroaromatic group; r is an integer having a value of 2 or greater; each n is independently an integer from 1 to 20; and each p is independently an integer from 1 to 10. N-type acceptor materials derived from such compounds and devices comprising such n-type acceptor materials are also provided.

