



- (51) **International Patent Classification:**
C07D 519/00 (2006.01)
- (21) **International Application Number:**
PCT/US2015/017710
- (22) **International Filing Date:**
26 February 2015 (26.02.2015)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/946,004 28 February 2014 (28.02.2014) US
- (71) **Applicant:** CORNING INCORPORATED [US/US]; 1 Riverfront Plaza, Corning, New York 14831 (US).
- (72) **Inventors:** HE, Mingqian; 19 Royal Crest Road, Horseheads, New York 14845 (US). HU, Jieyu; 8358 S Independence Circle, Unit 106, Littleton, Colorado 80128 (US). TANDIA, Adama; 183 Capitol Drive, Nelson, Pennsylvania 16940 (US).
- (74) **Agent:** BARRON, Jason A.; Corning Incorporated, Intellectual Property Department, SP-TI-3-1, Corning, New York 14831 (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, BN, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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.

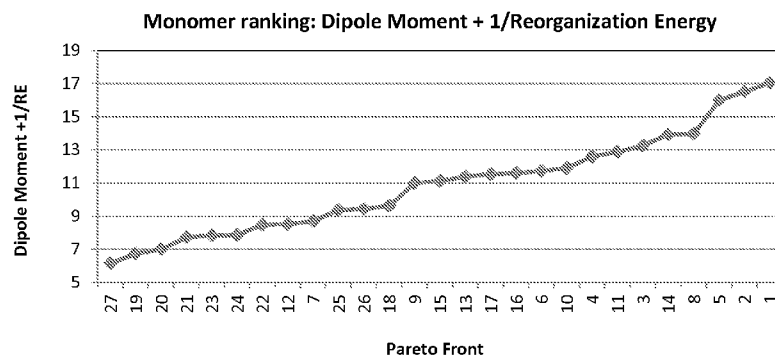
(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

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

(54) **Title:** DIKETOPYRROLOPYRROLE SEMICONDUCTING MATERIALS, PROCESSES FOR THEIR PREPARATION AND USES THEREOF

FIG. 1



(57) **Abstract:** Described herein are heterocyclic organic compounds. More specifically, described herein are compounds based on the combination of fused pyrrole structures with diketopyrrolopyrrole structures, methods for making these compounds, and uses thereof. The compounds disclosed have improved electronic, polymerization and stability properties that allow for improved material processibility and inclusion in organic semiconductor devices.