



- (51) **International Patent Classification:**
C07D 231/18 (2006.01)
- (21) **International Application Number:**
PCT/US2013/037596
- (22) **International Filing Date:**
22 April 2013 (22.04.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/635,969 20 April 2012 (20.04.2012) US
- (71) **Applicant:** MERIAL LIMITED [US/US]; 3239 Satellite Blvd., Duluth, GA 30096 (US).
- (72) **Inventors:** MENG, Charles, Q.; 7158 Belcrest Drive, Johns Creek, GA 30097 (US). LE HIR DE FALLOIS, Loic, Partrick; 404 Holly Lane, Chapel Hill, NC 27517 (US). LEE, Hyoung, Ik; 103 Roundtop Road, Cary, NC 27519 (US). ZHAN, Xinxi; 6 Taihe Road, BDA, Beijing, 100176 (CN). LABROSSE, Jean-Robert; 7 Lotissement Ancien Moulin, F-34160 Saint Hilaire De Beauvoir (FR). MULHAUSER, Michel; 22 Avenue Gabriel Peri, F-69370 Saint Didier Au Mont D'or (FR).
- (74) **Agent:** JARECKI-BLACK, Judy; 3239 Satellite Blvd., Duluth, GA 30096 (US).

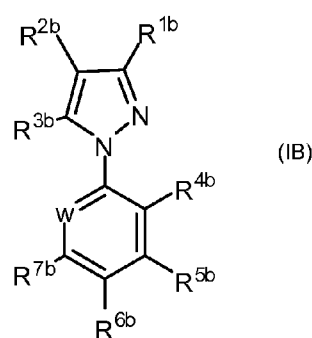
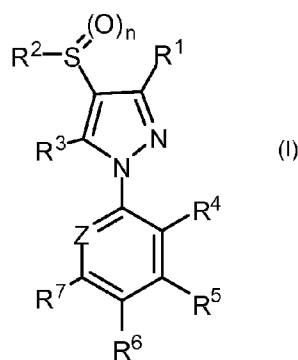
(81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, 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, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report (Rule 48.2(g))

(54) **Title:** IMPROVED PROCESSES FOR THE PREPARATION OF 1-ARYL-5-ALKYL PYRAZOLE COMPOUNDS



(57) **Abstract:** Provided are improved processes for the preparation of 1-aryl pyrazole compounds of formula (I) and (IB): which are substituted at the 5-position of the pyrazole ring with a carbon-linked functional group. The process described are efficient and scalable and do not utilize hazardous sulfonyl halide reagents.