(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 October 2012 (04.10.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/131289 A2

(51) **International Patent Classification**:
H01C 10/10 (2006.01)

(21) **International Application Number**:
PCT/GB2012/000260

(22) **International Filing Date**:
22 March 2012 (22.03.2012)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
1105025.9 25 March 2011 (25.03.2011) GB
1117492.7 11 October 2011 (11.10.2011) GB

(71) **Applicant** *(for all designated States except US)*: **PERATECH LIMITED** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **LUSSEY, Christopher** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB). **LAUGHLIN, Paul Jonathan** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB). **GRAHAM, Adam** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB). **BLOOR, David** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB). **LUSSEY, David John** [GB/GB]; The Old Repeater Station, 851 Gatherley Road, Brompton on Swale, Richmond DL10 7JH (GB).

(74) **Agents**: **CHAPMAN, Paul, N.** et al.; Atkinson & Company Intellectual Property Limited, Gateshead International Business Centre, Mulgrave Terrace, Gateshead NE8 1AN (GB).

(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, 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, MD, 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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

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

(54) **Title**: COMPOSITE MATERIAL

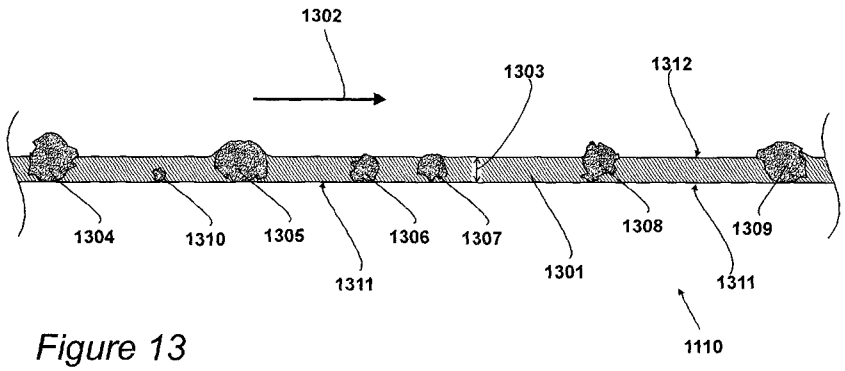


Figure 13

(57) **Abstract**: An electrically responsive composite material (1110), comprising a carrier layer (1301) having a length and a width and a thickness (1303) that is relatively small compared to said length and said width. The composite material also comprises a plurality of electrically conductive or semi-conductive particles (201). The particles (201) are agglomerated to form a plurality of agglomerates (104, 1306) dispersed within the carrier layer such that each said agglomerate comprises a plurality of the particles (201). The agglomerates are arranged to provide electrical conduction across the thickness of the carrier layer in response to applied pressure such that the electrically responsive composite material has a resistance that reduces in response to applied pressure.

WO 2012/131289 A2