



(51) International Patent Classification:  
**H01G 4/005** (2006.01)

(21) International Application Number:  
PCT/US2010/029821

(22) International Filing Date:  
2 April 2010 (02.04.2010)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, MS: RNB-4-150, Santa Clara, California 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GARDNER, Donald, S.** [US/US]; 2281 Oaktree Drive, Mountain View, California 94040 (US). **HANNAH, Eric, C.** [US/US]; 3046 Strawberry Hill, Pebble Beach, California 93953 (US). **CHEN, Rong** [CN/US]; 1141 Kassel Terrace, Sunnyvale, California 94089 (US). **GUSTAFSON, John, L.** [US/US]; 964 Piemonte Drive, Pleasanton, California 94566 (US).

(74) Agents: **VINCENT, Lester, J.** et al.; Blakely Sokoloff Taylor & Zafman, 1279 Oakmead Parkway, Sunnyvale, California 94085 (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, 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, 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, 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).

**Declarations under Rule 4.17:**

— of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: CHARGE STORAGE DEVICE, METHOD OF MAKING SAME, METHOD OF MAKING AN ELECTRICALLY CONDUCTIVE STRUCTURE FOR SAME, MOBILE ELECTRONIC DEVICE USING SAME, AND MICROELECTRONIC DEVICE CONTAINING SAME

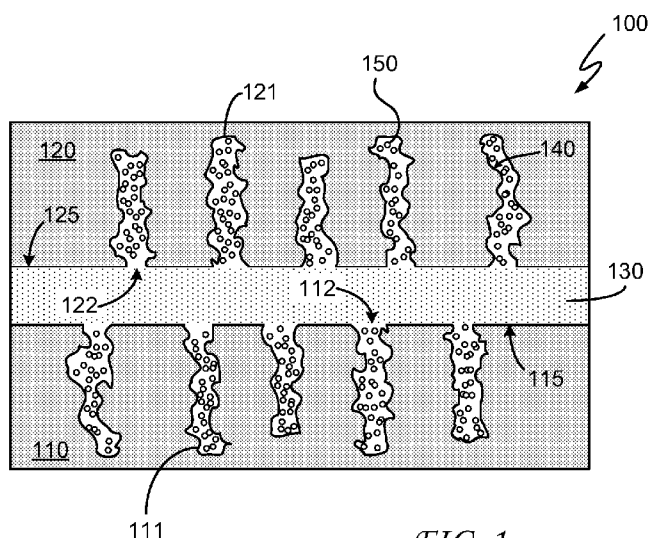


FIG. 1

(57) Abstract: In one embodiment a charge storage device includes first (110) and second (120) electrically conductive structures separated from each other by a separator (130). At least one of the first and second electrically conductive structures includes a porous structure containing multiple channels (111, 121). Each one of the channels has an opening (112, 122) to a surface (115, 125) of the porous structure. In another embodiment the charge storage device includes multiple nanostructures (610) and an electrolyte (650) in physical contact with at least some of the nanostructures. A material (615) having a dielectric constant of at least 3.9 may be located between the electrolyte and the nanostructures.

**WO 2011/123135 A1**



---

**Published:**

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