



(43) International Publication Date
27 December 2012 (27.12.2012)

- (51) International Patent Classification:
E21B 10/54 (2006.01) *B22F 1/02* (2006.01)
- (21) International Application Number:
PCT/US2011/057879
- (22) International Filing Date:
26 October 2011 (26.10.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/166,557 22 June 2011 (22.06.2011) US
- (71) Applicant (for all designated States except US): **BAKER HUGHES INCORPORATED** [US/US]; P.O. Box 4740, Houston, TX 77210-4740 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHAKRABORTY, Soma** [IN/US]; 10919 West Road, #718, Houston, TX 77064 (US). **KUZNETSOV, Olekzandr** [UA/US]; 1800 El Paseo, Houston, TX 77054 (US). **AGRAWAL, Gaurav** [US/US]; 18231 East Peakview Place, Aurora, CO 80016 (US).
- (74) Agents: **WELBORN, Brian, S.** et al.; Intellectual Property Counsel, Baker Hughes Incorporated, P.O. Box 4740, Houston, TX 77210-4740 (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, 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).

[Continued on next page]

(54) Title: COATED PARTICLES AND RELATED METHODS

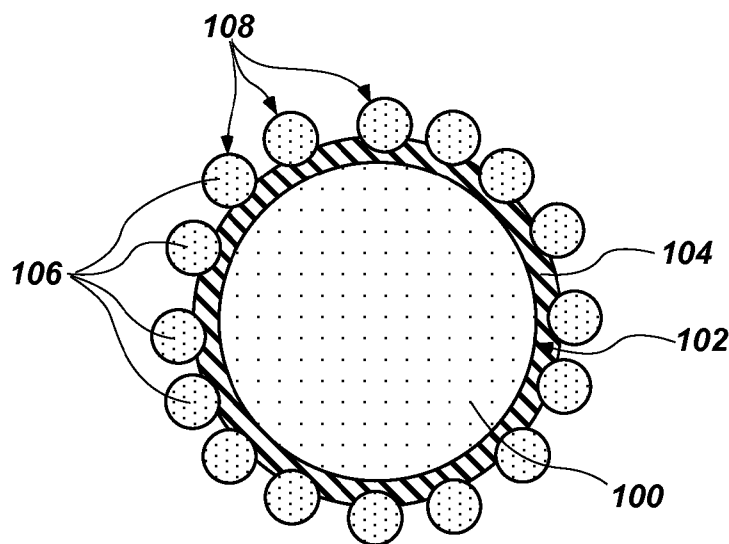


FIG. 3

(57) Abstract: Coated particles comprise a core particle comprising a superhard material and having an average diameter of between 1 μm and 500 μm . A coating material is adhered to and covers at least a portion of an outer surface of the core particle, the coating material comprising an amine terminated group. A plurality of nanoparticles selected from the group consisting of carbon nanotubes, nanographite, nanographene, non-diamond carbon allotropes, surface modified nanodiamond, nanoscale particles of BeO, and nanoscale particles comprising a Group VIIIA element is adhered to the coating material.



Declarations under Rule 4.17:

Published:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))* — *with international search report (Art. 21(3))*