



(51) International Patent Classification:

C09K 8/536 (2006.01) *C04B 35/01* (2006.01)
C09K 8/54 (2006.01) *C04B 38/00* (2006.01)
C09K 8/80 (2006.01) *E21B 43/04* (2006.01)

(21) International Application Number:

PCT/US2012/034507

(22) International Filing Date:

20 April 2012 (20.04.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/094,186 26 April 2011 (26.04.2011) US

(71) Applicant (for all designated States except US): **BAKER HUGHES INCORPORATED** [US/US]; 2929 Allen Parkway, Suite 2100, Houston, Texas 77019 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **GUPTA, D.V. Satyanarayana** [US/US]; 38 Webb Creek Place, The Woodlands, Texas 77382 (US).

(74) Agent: **JONES, John Wilson**; Jones & Smith, LLP, 2777 Allen Parkway, Suite 1000, Houston, Texas 77019 (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).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: COMPOSITES FOR CONTROLLED RELEASE OF WELL TREATMENT AGENTS

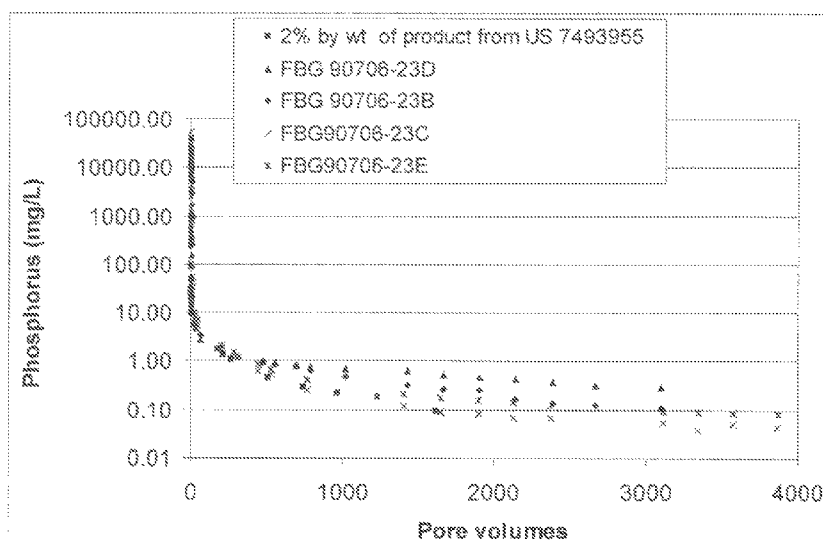


FIG. 3

(57) Abstract: A well treatment composite which allows for the slow release of one or more well treatment agents into a subterranean formation and/or a wellbore penetrating the formation has a nano-sized calcined porous substrate (adsorbent) of high surface area onto which is applied the well treatment agent. The composites are suitable for use in such well treatment operations as hydraulic fracturing and sand control.