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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 October 2009 (15.10.2009)

PCT

(10) International Publication Number
WO 2009/126922 A2

(51) International Patent Classification:
H01L 21/00 (2006.01) *H01L 21/301* (2006.01)
H01L 21/02 (2006.01) *H01L 31/042* (2006.01)

(21) International Application Number:
PCT/US2009/040261

(22) International Filing Date:
10 April 2009 (10.04.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/044,342 11 April 2008 (11.04.2008) US
61/148,033 28 January 2009 (28.01.2009) US

(71) Applicant *(for all designated States except US)*: **IOSIL ENERGY CORP.** [US/US]; 250 Park Avenue South, Suite 360, Winter Park, FL 32789 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **FALLAVOLLITA, John, Allan** [CA/CA]; 14815-93 Avenue, Edmonton, Alberta, T5R5G8 (CA).

(74) Agents: **ENG, U.P. Peter** et al.; Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304-1050 (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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, 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, 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))*

WO 2009/126922 A2

(54) **Title**: METHODS AND APPARATUS FOR RECOVERY OF SILICON AND SILICON CARBIDE FROM SPENT WAFER-SAWING SLURRY

(57) **Abstract**: Methods, systems, and apparatus are disclosed herein for recovery of high-purity silicon, silicon carbide and PEG from a slurry produced during a wafer cutting process. A silicon-containing material can be processed for production of a silicon-rich composition. Silicon carbide and PEG recovered from the silicon-containing material can be used to form a wafer-saw cutting fluid. The silicon-rich composition can be reacted with iodine containing compounds that can be purified and/or used to form deposited silicon of high purity. The produced silicon can be used in the photovoltaic industry or semiconductor industry.