

(43) International Publication Date
26 November 2009 (26.11.2009)

PCT

(10) International Publication Number
WO 2009/143271 A3

(51) International Patent Classification:

C01B 33/027 (2006.01) B01J 19/08 (2006.01)
C01B 33/021 (2006.01) H05H 1/02 (2006.01)

(21) International Application Number:

PCT/US2009/044712

(22) International Filing Date:

20 May 2009 (20.05.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/128,847 23 May 2008 (23.05.2008) US
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(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).

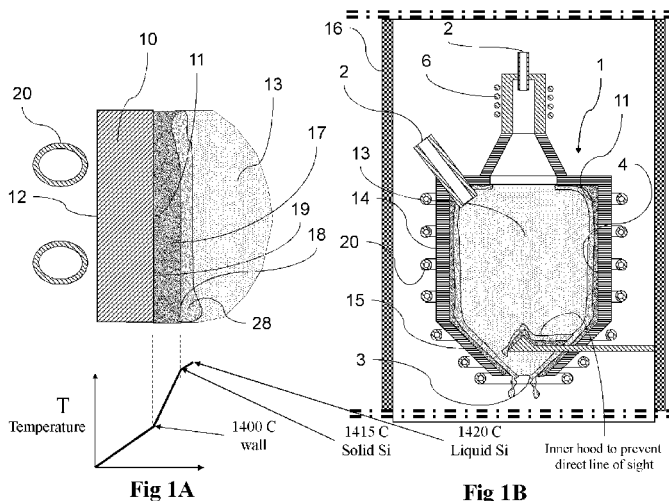
Published:

- 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))

(88) Date of publication of the international search report:

25 February 2010

(54) Title: SKULL REACTOR



(57) Abstract: A method for producing silicon or a reactive metal is disclosed herein that includes: introducing a silicon-bearing feed or reactive metal-bearing feed into a reactor chamber, wherein the reactor chamber includes a reactor chamber wall having (i) an inside surface facing a reaction space and (ii) an opposing outside surface; generating a first thermal energy within the reaction space sufficient to generate a liquid silicon product or a liquid reactive metal product; generating a second thermal energy exterior to the reactor chamber wall such that a heat flow from the second thermal energy initially impacts the outside surface of the reactor chamber wall; and establishing an inside surface wall temperature within a temperature range that is above or below a melting point temperature of the silicon or the reactive metal by controlling the first thermal energy source and the second thermal energy source.