

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 December 2007 (27.12.2007)

PCT

(10) International Publication Number
WO 2007/148986 A1

(51) International Patent Classification:
C30B 11/00 (2006.01)

(21) International Application Number:
PCT/NO2007/000220

(22) International Filing Date: 20 June 2007 (20.06.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/815,861 23 June 2006 (23.06.2006) US

(71) Applicant (for all designated States except US): **REC SCANWAFER AS** [NO/NO]; Tormod Gjestlands vei 41, N-3908 Porsgrunn (NO).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROLIGHETEN, Rune** [NO/NO]; Storveien 19, N-3919 Porsgrunn (NO). **RIAN, Gjertrud** [NO/NO]; Gregorius Dagssonsgt. 190, N-3713 Skien (NO). **JULSRUD, Stein** [NO/NO]; Gregorius Dagssonsgt. 190, N-3713 Skien (NO).

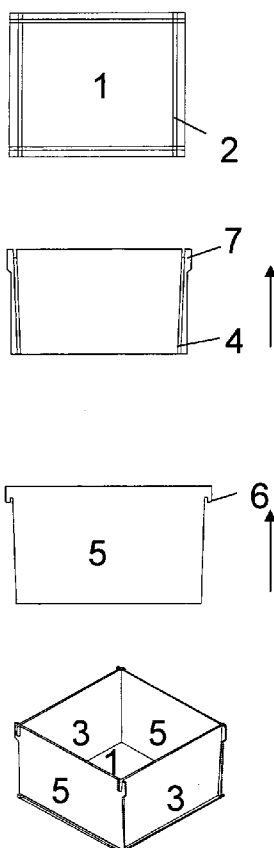
(74) Agents: **ONSAGERS AS** et al.; P.O.Box 6963 St. Olavs plass, N-0130 Oslo (NO).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: REUSABLE CRUCIBLES AND METHOD OF MANUFACTURING THEM



(57) Abstract: This invention relates to reusable crucibles for production of ingots of semiconductor grade silicon made of nitride bonded silicon nitride (NBSN). The crucibles may be made by mixing silicon nitride powder with silicon powder, forming a green body of the crucible, and then heating the green body in an atmosphere containing nitrogen such that the silicon powder is nitrided forming the NBSN-crucible. The crucibles may be assembled by plate elements of NBSN-material that are to be the bottom (1) and walls (3, 5) of a square cross-section crucible, and optionally sealing the joints by applying a paste comprising silicon powder and optionally silicon nitride particles, followed by a second heat treatment in a nitrogen atmosphere.

WO 2007/148986 A1

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.