

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
31 December 2008 (31.12.2008)

PCT

(10) International Publication Number
WO 2009/002550 A1

(51) International Patent Classification:
H01L 21/00 (2006.01)

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(21) International Application Number:
PCT/US2008/008030

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(22) International Filing Date: 26 June 2008 (26.06.2008)

(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, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/937,129 26 June 2007 (26.06.2007) US

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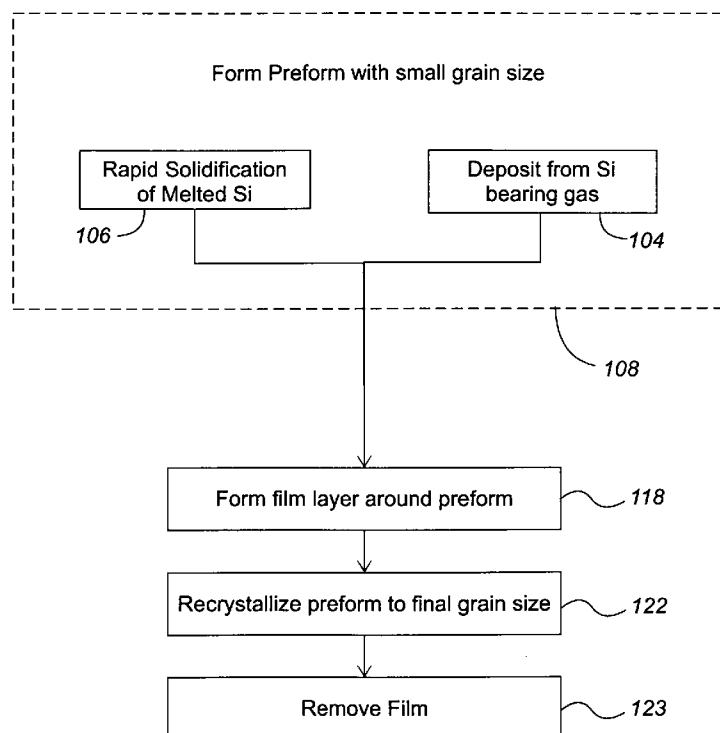
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(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

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(54) Title: RECRYSTALLIZATION OF SEMICONDUCTOR WAFERS IN A THIN FILM CAPSULE AND RELATED PROCESSES



(57) Abstract: An original wafer, typically silicon, has the form of a desired end PV wafer. The original may be made by rapid solidification or CVD. It has small grains. It is encapsulated in a clean thin film, which contains and protects the silicon when recrystallized to create a larger grain structure. The capsule can be made by heating a wafer in the presence of oxygen, or steam, resulting in silicon dioxide on the outer surface, typically 1-2 microns. Further heating creates a molten zone in space, through which the wafer travels, resulting in recrystallization with a larger grain size. The capsule contains the molten material during recrystallization, and protects against impurities. Recrystallization may be in air. Thermal transfer through backing plates minimizes stresses and defects. After recrystallization, the capsule is removed.

Fig. 1



FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, 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*