

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 February 2008 (28.02.2008)

PCT

(10) International Publication Number
WO 2008/024212 A3

- (51) International Patent Classification:
H01S 3/10 (2006.01) *H01S 3/101* (2006.01)
- (21) International Application Number:
PCT/US2007/017685
- (22) International Filing Date: 8 August 2007 (08.08.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
11/508,781 23 August 2006 (23.08.2006) US
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(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, 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, 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).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

— with international search report

[Continued on next page]

(54) Title: FAST AXIS BEAM PROFILE SHAPING BY COLLIMATION LENSLETS

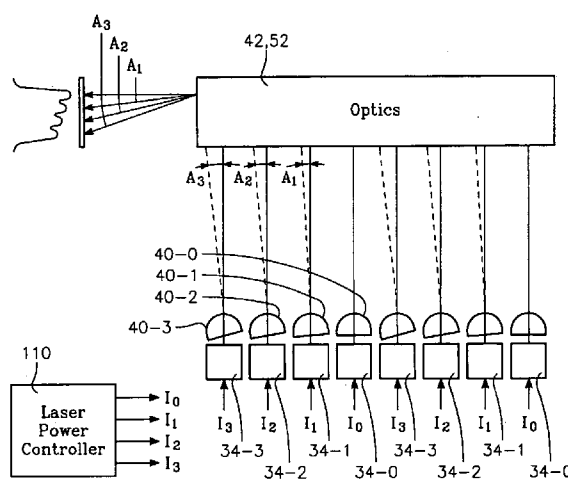


FIG. 19

(57) Abstract: A dynamic surface anneal apparatus for annealing a semiconductor workpiece has a workpiece support for supporting a workpiece, an optical source and scanning apparatus for scanning the optical source and the workpiece support relative to one another along a fast axis. The optical source includes an array of laser emitters (34-n) arranged generally in successive rows of the emitters, the rows being transverse to the fast axis. Plural collimating lenslets overlie respective ones of the rows of emitters and provide collimation along the fast axis. The selected lenslets (40n) have one or a succession of optical deflection angles corresponding to beam deflections along the fast axis for respective rows of emitters. Optics (42, 52) focus light from the array of laser emitters onto a surface of the workpiece to form a succession of line beams transverse to the fast axis spaced along the fast axis in accordance with the succession of deflection angles (An).

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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

21 August 2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/17685

A. CLASSIFICATION OF SUBJECT MATTER

IPC: H01S 3/10(2006.01),3/101(2006.01)

USPC: 219/121.66,121.76;438/487

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 219/121.66, 121.76; 438/487

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, fast, axis, optic, reflect, deflect, anneal, crystal, laser, emitter, lenslet, silicon, semiconductor, wafer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P	US 2006/0262408 A1 (KATO) 23 November 2006 (23.11.06), Front Page.	
A	US 6,771,686 B1 (ULLMAN et al) 03 August 2004 (03.08.04), Front Page and Claim 1.	
A	US 6,556,352 B2 (WANG et al) 29 April 2003 (29.04.03), Front Page.	
A	US 6,044,096 (WOLAK et al) 28 March 2000 (28.03.00), Front Page.	
A	US 4,710,911 (Yamada et al) 01 December 1987 (01.12.87), Abstract.	
A	US 4,403,318 (NAGASHIMA et al) 06 September 1983 (06.09.83), column 5, lines 27-32).	

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See patent family annex.

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Date of the actual completion of the international search

22 May 2008 (22.05.2008)

Date of mailing of the international search report

20 JUN 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
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Alexandria, Virginia 22313-1450

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