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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
30 March 2006 (30.03.2006)

PCT

(10) International Publication Number
WO 2006/032947 A1

(51) International Patent Classification[7]: H01L 21/762

(21) International Application Number:
PCT/IB2004/003300

(22) International Filing Date:
21 September 2004 (21.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **S.O.I.TEC SILICON ON INSULATOR TECHNOLOGIES** [FR/FR]; Parc Technologique des Fontaines, Chemin des Franques, F-38190 Bernin (FR).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **NGUYEN, Nguyet, Phuong** [VN/FR]; 65 Rue Joseph Bouchayer, F-38100 Grenoble (FR). **BEN MOHAMED, Nadia** [FR/FR]; 8, Hameau du Grand pré, F-38140 Renage (FR). **BOUSSAGOL, Alice** [FR/FR]; 25 rue du Lac, F-38190 Brignoud (FR). **AKATSU, Takeshi** [JP/FR]; 9, Place de l'Eglise, F-38330 Saint Nazaire Les Eymes (FR). **SUCIU, Gabriela** [FR/FR]; 21, rue de la Station Ponsard, F-38100 Grenoble (FR).

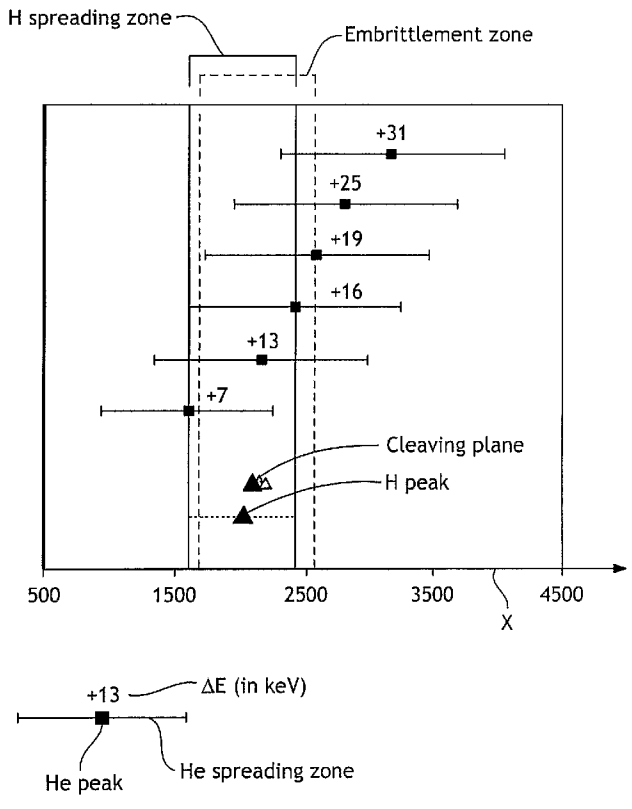
(74) Agents: **MARTIN, Jean-Jacques** et al.; Cabinet Regimbeau, 20, rue de Chazelles, F-75847 Paris Cedex 17 (FR).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, IT, LU, MC, NL, PL, PT, RO, SE,

[Continued on next page]

(54) Title: THIN LAYER TRANSFER METHOD WHEREIN A CO-IMPLANTATION STEP IS PERFORMED ACCORDING TO CONDITIONS AVAOIDING BLISTERS FORMATION AND LIMITING ROUGHNESS



(57) Abstract: The invention proposes a method for transferring a thin layer wherein a co-implantation step of two different species is performed. The implantation energies of said first and second species are selected such that said second species peak is located in the thickness of the donor substrate within said embrittlement zone and more in-depth than said first species spreading zone, and the implantation doses of said first and second species are selected to be substantially similar, the first species implantation dose counting from 40% to 60% of the total implantation dose.

WO 2006/032947 A1

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:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

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.