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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/071730 A1

(51) International Patent Classification[7]: H01L 21/336, 29/786

(21) International Application Number: PCT/US2005/000947

(22) International Filing Date: 10 January 2005 (10.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/760,028 16 January 2004 (16.01.2004) US

(71) Applicant *(for all designated States except US)*: **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CHAU, Robert** [US/US]; 8875 SW 171st Avenue, Beaverton, OR 97007 (US). **DATTA, Suman** [US/US]; 16659 NW Talkingstick Way, Beaverton, OR 97006 (US). **DOYLE, Brian** [IE/US]; 11156 NW Montreux Lane, Portland, OR 97229 (US). **JIN, Been** [US/US]; 12872 Sierra Court, Lake Oswego, OR 97035 (US).

(74) Agent: **VINCENT, Lester, J.**; Blakely, Sokoloff, Taylor & Zafman, 12400 Wilshire Boulevard, 7th Floor, Los Angeles, CA 90025 (US).

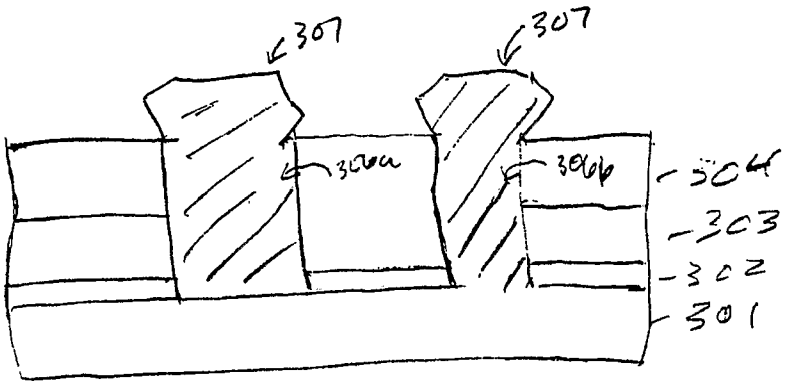
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, 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, IS, IT, LT, LU, MC, 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).

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.

(54) Title: TRI-GATE TRANSISTORS AND MEHTODS TO FABRICATE SAME



(57) Abstract: Embodiments of the invention provide a method for effecting uniform silicon body height for silicon-on-insulator transistor fabrication. For one embodiment, a sacrificial oxide layer is disposed upon a semiconductor substrate. The oxide layer is etched to form a trench. The trench is then filled with a semiconductor material. The semiconductor material is then planarized with the remainder of the oxide layer and the remainder of the oxide layer is then removed. The semiconductor fins thus exposed are of uniform height to within a specified tolerance.

WO 2005/071730 A1