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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 July 2007 (26.07.2007)

PCT

(10) International Publication Number
WO 2007/083152 A1

(51) International Patent Classification:
H01L 21/306 (2006.01)

(21) International Application Number:
PCT/GB2007/000204

(22) International Filing Date: 23 January 2007 (23.01.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0601318.9 23 January 2006 (23.01.2006) GB

(71) Applicant *(for all designated States except US)*: **IMPERIAL INNOVATIONS LIMITED** [GB/GB]; Electrical and Electronic Engineering Building, Level 12, Imperial College, London SW7 2AZ (GB).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **GREEN, Mino** [GB/GB]; Electrical and Electronic Engineering Building, Level 7, Imperial College, Exhibition Road, London SW7 2AZ (GB).

(74) Agents: **HEDLEY, Nicholas, James, Matthew** et al.; Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ (GB).

(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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, 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, 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.

WO 2007/083152 A1

(54) Title: METHOD OF ETCHING A SILICON-BASED MATERIAL

(57) Abstract: A method is described of selectively etching a silicon substrate in small local areas in order to form columns or pillars in the etched surface. The silicon substrate is held in an etching solution of hydrogen fluoride, a silver salt and an alcohol. The inclusion of the alcohol provides a greater packing density of the silicon columns.