

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 February 2009 (05.02.2009)

PCT

(10) International Publication Number
WO 2009/017982 A3

- (51) International Patent Classification:
H01L 21/027 (2006.01)
- (21) International Application Number:
PCT/US2008/070407
- (22) International Filing Date: 18 July 2008 (18.07.2008)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
11/830,449 30 July 2007 (30.07.2007) US
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- (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, ST, 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, 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
 - 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:
2 April 2009

(54) Title: METHODS FOR DEVICE FABRICATION USING PITCH REDUCTION AND ASSOCIATED STRUCTURES

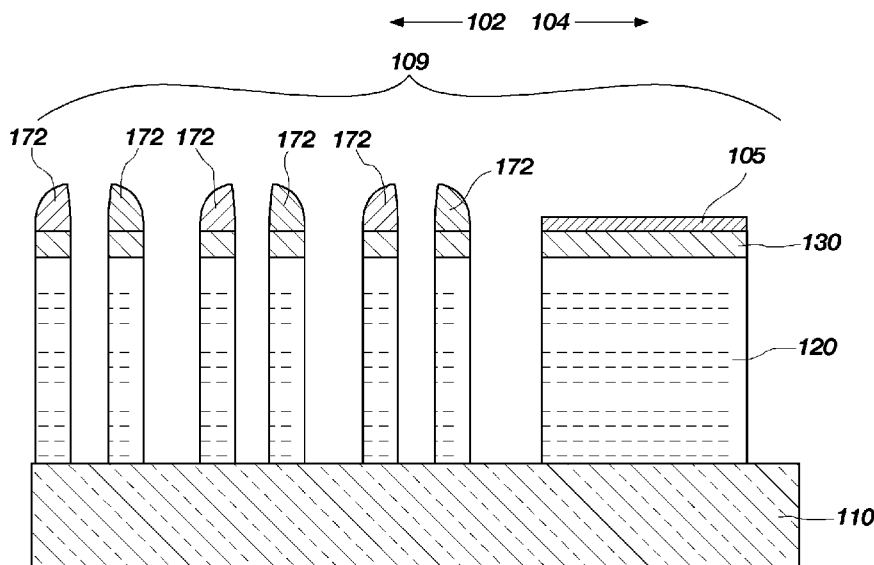


FIG. 16

(57) Abstract: Embodiments of a method for device fabrication by reverse pitch reduction flow include forming a first pattern of features above a substrate and forming a second pattern of pitch-multiplied spacers subsequent to forming the first pattern of features. In embodiments of the invention the first pattern of features may be formed by photolithography and the second pattern of pitch-multiplied spacers may be formed by pitch multiplication. Other methods for device fabrication are provided.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/070407**A. CLASSIFICATION OF SUBJECT MATTER****H01L 21/027(2006.01)i**

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)

IPC 8 H01L 21/027, 21/302, 21/461, H05K 1/11, H01L 23/48

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

Korean Utility Models and applications for Utility Models since 1975

Japanese Utility Models and applications for Utility Models since 1975

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

eKIPASS(KIPO internal) & keyword : pitch multiplication, pitch doubling, periphery, array, pattern

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7,115,525 B2 (MIRZAFER K. ABATCHEV et al.) 3 OCTOBER 2006 See the abstract; col 7~11; Fig.2~16	1~34
X	US 2006/0262511 A1 (MIRZAFER K. ABATCHEV et al.) 23 NOVEMBER 2006 See the abstract; col 4~7; Fig.2~16	1~34
X	US 2007/0148984 A1 (MIRZAFER K. ABATCHEV et al.) 28 JUNE 2007 See the abstract; col 4~7; Fig.2~16	1~34
A	US 2006/0273456 A1 (SANKET SANT et al.) 7 DECEMBER 2006 See the whole document	1~34

 Further documents are listed in the continuation of Box C. See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

11 FEBRUARY 2009 (11.02.2009)

Date of mailing of the international search report

11 FEBRUARY 2009 (11.02.2009)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Choi, Jeong Yoon

Telephone No. 82-42-481-5724



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/070407

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