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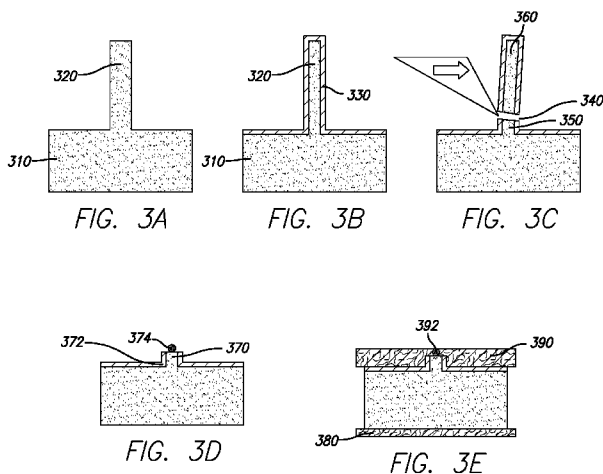
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(54) **Title:** METHODS FOR FABRICATING SELF-ALIGNING ARRANGEMENTS ON SEMICONDUCTORS



(57) **Abstract:** Methods for fabricating self-aligned heterostructures and semiconductor arrangements using silicon nanowires are described.



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A. CLASSIFICATION OF SUBJECT MATTER***H01L 21/336(2006.01)i, H01L 29/78(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)

H01L 21/336; H01L 21/768; H01L 31/0304; H01L 21/20; B32B 3/02; H01L 21/4763; H01L 23/48; H01B 13/00

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: self-aligning, nanowire, coating, cleaving

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X A | US 2008-0142970 A1 (EVANS DAVID R. et al.) 19 June 2008 See abstract; paragraphs [0016]-[0018], [0020]-[0028]; claims 1-20; figures 1-2, 4. | 1 2-4, 8-10, 15-20 |
| A | US 2004-0071951 A1 (SUNGHO JIN) 15 April 2004 See paragraphs [0027]-[0036]; claims 6-11; figures 2-3. | 1-4, 8-10, 15-20 |
| A | US 2004-0108298 A1 (BO GAO) 10 June 2004 See paragraphs [0054]-[0066]; claims 1-6, 13; figures 2A-2C. | 1-4, 8-10, 15-20 |
| A | US 2006-0063368 A1 (SHASHANK SHARMA) 23 March 2006 See paragraphs [0025]-[0037]; claims 1-11; figures 1A-1C, 2A-2G. | 1-4, 8-10, 15-20 |
| A | US 2008-0036038 A1 (STEPHEN D. HERSEE et al.) 14 February 2008 See abstract; paragraphs [0044]-[0120]; claims 1-25; figures 1A-12. | 1-4, 8-10, 15-20 |

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.: 5-7, 11-14, 21-22
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/057301

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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