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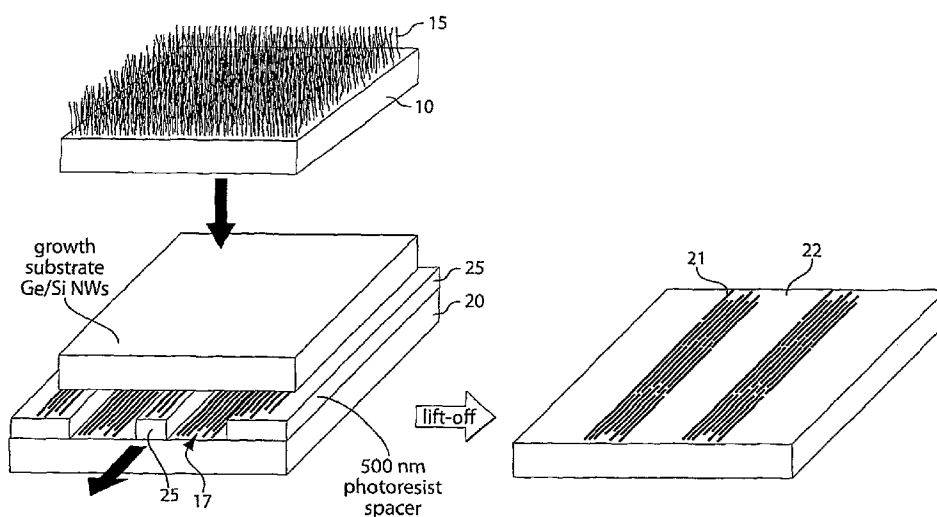
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(54) Title: NANOSCALE WIRE METHODS AND DEVICES



(57) Abstract: The present invention generally relates to nanoscale wire methods and devices, including systems and methods for positioning nanoscale wires on a surface, and articles made therefrom. One aspect of the invention is generally directed to aligned nanoscale wires on a surface of a substrate, and systems and methods of positioning such nanoscale wires on the surface. In one set of embodiments, a first substrate is provided having a plurality of nanoscale wires, and at least some of the nanoscale wires are transferred to a second substrate by contacting at least some of the nanoscale wires with the second substrate, e.g., by moving or "sliding" the substrates relative to each other, in some cases causing alignment of the nanoscale wires on the second substrate. Another aspect of the invention is generally directed to electrical devices comprising a number of planes defined by nanoscale wires, e.g., in a "stacked" configuration. Yet other aspects of the invention are directed to nanoscale wires that can be used as sensors, e.g., in such devices. Still other aspects of the invention are directed to systems and methods for making and using such devices, kits involving the same, and the like.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/008540

A. CLASSIFICATION OF SUBJECT MATTER
INV. B82B3/00 H01L29/06

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)
B82B H01L

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/019472 A1 (PAN YAOLING ET AL) 26 January 2006 (2006-01-26) paragraph [0125] paragraph [0183] - paragraph [0201]; figures 18-22	1-52, 68-72, 83
X	EP 1 170 799 A (INFINEON TECHNOLOGIES AG) 9 January 2002 (2002-01-09) column 5, line 35 - column 7, line 53; figure 1	53-67, 73-82
X	JP 2001 281965 A (RICOH KK) 10 October 2001 (2001-10-10) abstract; figure 5	68-72
X	US 2004/075464 A1 (SAMUELSON LARS IVAR ET AL) 22 April 2004 (2004-04-22) claim 39; figure 17	83

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 document 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 another 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.
- *Z* document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/008540

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.:
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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-15,44-52

The first invention concerns a second substrate or nanowires contacting a second substrate.

2. claims: 16-43

The second invention concerns nanowires that are not exposed to liquid.

3. claims: 53-82

The third invention concerns a further intersecting plane and an intermediate plane of non-fluid material.

4. claim: 83

The fourth invention concerns an electronic circuit.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/008540

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006019472 A1	26-01-2006	US 2006255481 A1	16-11-2006
EP 1170799 A	09-01-2002	US 2002153160 A1	24-10-2002
JP 2001281965 A	10-10-2001	NONE	
US 2004075464 A1	22-04-2004	NONE	