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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: STOCHASTIC ASSEMBLY OF SUBLITHOGRAPHIC NANOSCALE INTERFACES

(57) Abstract: A method for controlling electric conduction on nanoscale wires is disclosed. The nanoscale wires are provided with controllable regions axially and/or radially distributed. Controlling those regions by means of microscale wires or additional nanoscale wires allows or prevents electric conduction on the controlled nanoscale wires. The controllable regions are of two different types. For example, a first type of controllable region can exhibit a different doping from a second type of controllable region. The method allows one or more of a set of nanoscale wires, packed at sublithographic pitch, to be independently selected.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 03/23198

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G11C13/02 G11C8/10

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 7 G11C

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 256 767 B1 (KUEKES PHILIP J ET AL) 3 July 2001 (2001-07-03) cited in the application abstract; figures 5,6 column 2, line 33 - column 13, line 15	1-33, 41-45, 52-71
A	----- -/--	34-40

Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
- "&" document member of the same patent family

Date of the actual completion of the international search

26 May 2004

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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ANDRE DEHON: "Array-Based Architecture for Molecular Electronics" THE 8TH INTERNATIONAL SYMPOSIUM ON HIGH PERFORMANCE COMPUTER ARCHITECTURE (HPCA-8), [Online] 2 February 2002 (2002-02-02), - 6 February 2002 (2002-02-06) XP002280761 Retrieved from the Internet: URL:http://www-2.cs.cmu.edu/~phoenix/nsc1/ > [retrieved on 2004-05-18] the whole document</p>	<p>1,14,52, 60</p>
A	<p>-----</p>	<p>2-13, 15-33, 41-45, 53-59, 61-71</p>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/23198

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 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.:

1-45, 52-71

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-45, 52-71

Invention 1: A method for stochastically establishing a subset of nanoscale wires from a plurality of nanoscale wires.

2. claims: 14, 15, 46-51

Invention 2: A method for tolerating the misalignment between control wires and regions on the nanoscale wires associated with the control wires.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 03/23198

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6256767	B1	03-07-2001	NONE
