Title: PRINTABLE SEMICONDUCTOR STRUCTURES AND RELATED METHODS OF MAKING AND ASSEMBLING

Abstract: The present invention provides a high yield pathway for the fabrication, transfer and assembly of high quality printable semiconductor elements having selected physical dimensions, shapes, compositions and spatial orientations. The compositions and methods of the present invention provide high precision registered transfer and integration of arrays of micro-sized and/or nano-sized semiconductor structures onto substrates, including large area substrates and/or flexible substrates. In addition, the present invention provides methods of making printable semiconductor elements from low cost bulk materials, such as bulk silicon wafers, and smart-materials processing strategies that enable a versatile and commercially attractive printing-based fabrication platform for making a broad range of functional semiconductor devices.
### INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

**IPC:**
- H01L 21/302 (2006.01), 21/824 (2006.01), 23/62 (2006.01); H05K 3/36 (2006.01); H01R 12/00 (2006.01)
- H01L 21/302 (2006.01), 21/824 (2006.01), 23/62 (2006.01); H05K 3/36 (2006.01); H01R 12/00 (2006.01)

**USPC:**
- 257/341; 438/256,725; 439/67; 29/830

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)

U.S. : 257/341; 438/256, 725; 439/67; 29/830

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

Electronic data base searched other than minimum documentation to the extent that such documents are included in the fields searched

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category *</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>

* A: Special categories of cited documents:
  - *A* document defining the general state of the art which is not considered to be of particular relevance
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  - *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)
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  - *P* document published prior to the international filing date but later than the priority date claimed

* T: Document of later publication date than the international filing date for a document of the same patent family

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Further documents are listed in the continuation of Box C.

Date of the actual completion of the international search

10 February 2008 (10.02.2008)

Date of mailing of the international search report

28 February 2008

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