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(54) Title: STRAINED SEMICONDUCTOR-ON-INSULATOR BY Si:C COMBINED WITH POROUS PROCESS

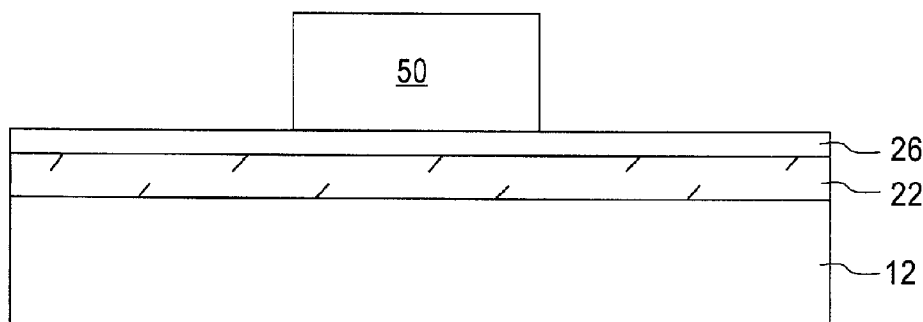


FIG. 3

(57) Abstract: A method of fabricating a strained semiconductor-on- insulator (SSOI) substrate is provided. The method includes first providing a structure that includes a substrate, a doped and relaxed semiconductor layer on the substrate, and a strained semiconductor layer on the doped and relaxed semiconductor layer. In the invention, the doped and relaxed semiconductor layer having a lower lattice parameter than the substrate. Next, at least the doped and relaxed semiconductor layer is converted into a buried porous layer and the structure including the buried porous layer is annealed to provide a strained semiconductor-on-insulator substrate. During the annealing, the buried porous layer is converted into a buried oxide layer.

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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)

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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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/003555 A1 (ADAM THOMAS N [US] ET AL) 5 January 2006 (2006-01-05) page 1, paragraph 20 - page 4, paragraph 54 page 4, paragraphs 57,58 claims 15,18	1-25
A	US 2004/245571 A1 (CHENG ZHIYUAN [US] ET AL) 9 December 2004 (2004-12-09) page 3, paragraphs 31,32; claims 26-31	1-25
A	WO 2004/073043 A (MASSACHUSETTS INST TECHNOLOGY [US]; CHENG ZHIYUAN [US]; FITZGERALD EUG) 26 August 2004 (2004-08-26) page 9, lines 11-27 claims 26-33 figures 10A-10D	1-25
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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