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(54) Title: METHOD FOR MICROFABRICATING STRUCTURES USING SILICON-ON-INSULATOR MATERIAL

(57) Abstract: The invention provides a general fabrication method for producing MicroElectroMechanical Systems (MEMS) and related devices using Silicon-On-Insulator (SOI) wafer. The method includes providing an SOI wafer that has (i) a handle layer, (ii) a dielectric layer, and (iii) a device layer, wherein a mesa etch has been made on the device layer of the SOI wafer, providing a substrate, wherein a pattern has been etched onto the substrate, bonding the SOI wafer and the substrate together, removing the handle layer of the SOI wafer, removing the dielectric layer of the SOI wafer, then performing a structural etch on the device layer of the SOI wafer to define the device.

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : H01L 21/00;H01L 29/06
 US CL : 438/50,52,456;257/622
 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. : 438/48,50,52,456;257/622

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 practicable, search terms used)
 WEST (Derwent,US, semiconductor,handle wafer, TMAH, anodic bond

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,277,666 B1 (Hays et al) 21 August 2001 (21.08.2001), figure 1a, 2b, 2c column 6 line 1, column 7 lines 29-30, column 6 lines 10, 43-column 7 line 14, column 2 lines 38-43	1-3,5-9,11,13-15,23,31 ----- 4,10,12,16-22,24-30
Y	US 6,431,714 B (Swada et al) 13 August 2002 (13.08.2002) column 15 lines 54-60	4
Y	US 6,077,721 A (Fukada et al) 20 June 2000 (20.06.2000) column 8 line 67-column 9 line 2	16,24
Y	US 6,433,401 B1 (Clark et al) 13 August 2002 (13.08.2002) column 7 lines 40-52	16,24
Y	US 5,760,443 (McCarthy) 2 June 1998 (02.06.1998) column 3 lines 15,30-31, column 5 lines 8-40	10,12,17-22,25-28-30
Y	US 6,291,875 B1 (Clark et al) 18 September 2001 (18.09.2001) column 7 lines 40-45	22,30
Y	US 6,458,615 B1 (Fedder et al) 1 October 2002 (01.10.2002) column 8 lines 27-30	21,29
A,P	US 6,673,694 (Borenstein) 6 January 2004 (06.01.2004)	

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

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