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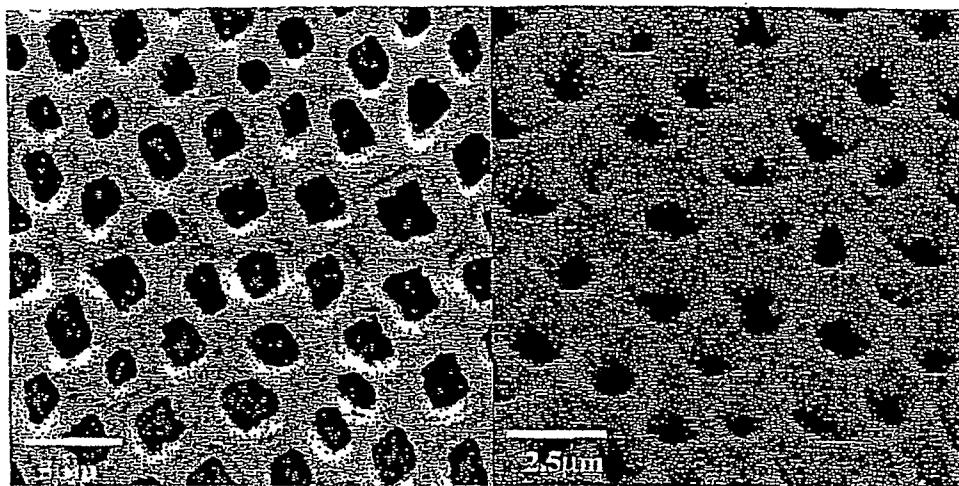
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(54) Title: SMART-CUT OF A THIN FOIL OF POROUS Ni FROM A Si WAFER



(57) Abstract: The present invention is a method of fabricating a self-peeling nickel foil from a silicon wafer. The method includes forming a template of silicon by electrochemically etching a portion of the Si wafer to create a porous Si portion with pores of a desired depth. Then electrolessly plating nickel into the template, wherein the porous silicon portion is converted into a porous nickel portion and continuing the electroless plating until the internal tensile stress at an interface of the porous nickel portion and the silicon wafer is great enough to self-peel the porous nickel portion from the silicon wafer creating a nickel foil.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/11831

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): B21C 37/00 (2007.01)

USPC: 428/606

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)

USPC: 428/606

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 428/606; 427/282,299,307,430.1,437,99.5; 429/235 (text search)

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

PubWEST (PGPB,USPT,USOC,EPAB,JPAB); DialogPro (Google Scholar); General Research

Self-peeling, smart cut, nickel, foil, sheet, film, layer, silicon, pore, aspect ratio, photoresist, cool, magnet, nickel sulfate, dmso, HF, water, ammonium hydroxide, peroxide, resistivity, ohm

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0031814 A1 (DAWES) 10 February 2005 (10.02.2005), para [0023] and [0065].	1-20
Y	US 4,374,707 A (POLLACK) 22 February 1983 (22.02.1983), abstract, col 2, ln 2-31, col 2, ln 5-62 and col 3, ln 34-68.	1-20, 22, 32 and 33
Y	US 2004/0134879 A1 (KOCHERGIN et al.) 15 July 2004 (15.07.2004), Fig. 3a, 12f-12h para [0041], [0044], [0065]-[0067], [0117], [0118], [0123], [0154]-[0159], [0163] and [0172]-[0174].	1-35
Y	US 5,686,152 A (JOHNSON et al.) 11 November 1997 (11.11.1997), col 5, ln 1-14 and col 7, ln 8-18.	9, 16 and 34
Y	US 5,407,315 A (SUGA) 18 April 1995 (18.04.1995), abstract, Fig. 1 and col 3, ln 9-29.	10
Y	US 5,689,879 A (URASAKI et al.) 25 November 1997 (25.11.1997), col 5, ln 11-20, col 6, ln 11-22, col 6, ln 63-65, col 9, ln 45-55, col 13, ln 32-38 and col 14, ln 49-67.	11 and 21-35
Y	US 2004/0209106 A1 (GALES et al.) 21 October 2004 (21.10.2004), abstract, para [0013] and claim 35 and 58.	21-35

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