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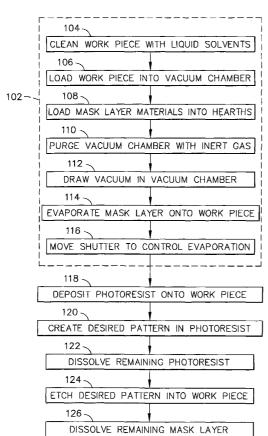
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(54) Title: NON-MECHANICAL FABRICATION OF CARBON-CONTAINING WORK PIECES



(57) Abstract: Complex features and fine details are created in a carbon containing work piece by photolithography. A mask layer is deposited by evaporation onto the work piece. A desired pattern is created on the mask layer. The pattern is etched into the work piece and the remaining portion of the mask layer is dissolved.



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INTERNATIONAL SEARCH REPORT

Interna al Application No PCT/us 02/22504

A. CLASSIFICATION OF SUBJECT MATTER . IPC 7 G03F7/09

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) $IPC\ 7\ G03F$

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, WPI Data, PAJ, INSPEC

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 767 418 A (DEININGER ET AL.) 30 August 1988 (1988-08-30) see abstract column 1, line 48-66; claims 1-4	1-7
X	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 12, 26 December 1996 (1996-12-26) & JP 08 203821 A (HONDA MOTOR CO., LTD.), 9 August 1996 (1996-08-09) abstract/	1-7

γ Further documents are listed in the continuation of box C.	χ 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 4 April 2003	Date of mailing of the international search report 14/04/2003
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Thiele, N

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Intern al Application No
PCT/US 02/22504

		PC1/US UZ/ZZ5U4						
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT Cotogon 8. Citation of document with indication where conventions of the valeurent page good. Relevant to claim No.								
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.						
X	ANONYMOUS: "Method for Fabricating Imaged Sticker Sheet for use in Printed Circuit Cards/Boards" RESEARCH DISCLOSURE, no. 320, December 1990 (1990-12), page 947 XP000163333 abstract	1-7						
X	"Polyimide Photolithography" IEEE/ISHM 12TH INTERNATIONAL ELECTRONIC MANUFACTURING TECHNOLOGY SYMPOSIUM, April 1992 (1992-04), pages 295-314, XP000401829 page 304	1-7						
X	US 4 493 855 A (SACHDEV ET AL.) 15 January 1985 (1985-01-15) column 6, line 10-36 column 7, line 26-40	1-7						
Υ	US 4 502 916 A (UMEZAKI ET AL.) 5 March 1985 (1985-03-05) claim 1; figures 1A-1D	1-7						
Υ	WO 99 33660 A (OHIO ELECTRONIC ENGRAVERS, INC.) 8 July 1999 (1999-07-08) page 1, line 23; claim 35; figure 11 page 31, line 23-30	1-7						

INTERNATIONAL SEARCH REPORT

Intern al Application No
PCT/US 02/22504

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4767418	Α	30-08-1988	US	4869714 A	26-09-1989
JP 08203821	A	09-08-1996	NONE		سے ہیں ہیں جی بھا کہ ایک بنات انکا کا انت ا میں بنا
US 4493855	Α	15-01-1985	DE	3382697 D1	22-07-1993
			EP	0114229 A2	01-08-1984
			JР	1896622 C	23-01-1995
			JP	6022219 B	23-03-1994
			JP	59121937 A	14-07-1984
			US	4562091 A	31-12-1985
			US	4599243 A	08-07-1986
US 4502916	Α	05-03-1985	JP	59202636 A	16-11-1984
WO 9933660	Α	08-07-1999	US	6347891 B1	19-02-2002
			EP	1040003 A1	04-10-2000
			JP	2001526988 T	25-12-2001
			WO	9933660 A1	08-07-1999