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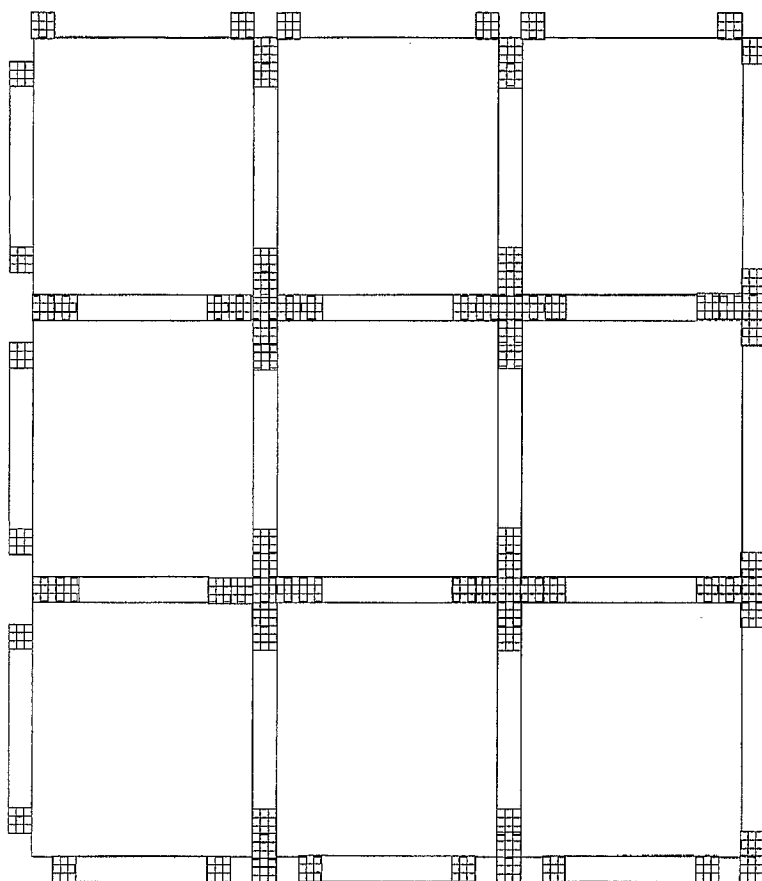
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[Continued on next page]

(54) Title: IMPRINT LITHOGRAPHY SYSTEM



(57) Abstract: The present invention is directed towards a choice of the shape of the patterned fields for Level 0 (patterned by imprint or photolithography or e-beam, etc.) and Level 1 (patterned by imprint) such that these shapes when tessellated together eliminate the open areas caused by the moats.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/08432

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B29C 35/04

USPC - 264/401

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(8) - B29C 35/04

USPC - 264/401

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 264/401, 1.25, 1.27, 1.5, 1.7; 438/947

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

PubWEST(USPT,JPAB,EPAB,PGPB), Google Patent, Google Scholar

SEARCH TERMS: imprint lithography, substrate, active area, active imprint field, die, tessellate, microprocessor, MP, MEMS, "microminiature" or "micro-miniature", Moir? grating, Moire pattern, saw street, scribe street, scribe line, open area, fill, "non rectangular"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	2004/0248384 A1 (KUO et al.) 09 December 2004 (09.12.2004), Figs. 3, 5, paragraphs [0024], [0033], [0046] and [0051]	1-2 ----- 3, 5-a, 5-b, 6-a, 6-b and 7 -9
Y	US 6,153,492 A (WEGE et al.) 28 November 2000 (28.11.2000), Abstract, col. 1, lines 61-65, col. 2, lines 29-35, col. 3:29-32, col. 5 line 64- col. 6 line-4, claim 20	3, 5-a, 5-b, 6-a, 6-b and 7 -9
Y	US 6,954,275 B2 (CHOI et al.) 11 October 2005 (11.10.2005), Abstract	5-a and 6-a
Y	US 6,150,231 A (MULLER et al.) 21 November 2000 (21.11.2000), Fig. 6 and col. 2, lines 57-58	5-b
Y	US 2006/0050284 A1 (BERTIN-MOUROT et al.) 09 March 2006 (09.03.2006), Abstract, paragraphs [0009], [0013], [0014], [0015], [0016], [0017], [0018], [0019]	6-b
Y	US 2003/0211671 A1 (BLANCHARD) 13 November 2003 (13.11.2003), paragraphs [0038] and [0039]	9
A	US 2004/0212047 A1 (JOSHI et al.) 28 October 2004 (28.10.2004), paragraph [0065]	9
A	US 2002/0074562 A1 (SUZUKI) 20 June 2002 (20.06.2002), entire document	1-9
A	US 6,713,843 B2 (FU) 30 March 2004 (30.03.2004), entire document	1-9
A	US 2006/0019424 A1 (WENG et al.) 26 January 2006 (26.01.2006), entire document, especially Figs. 3, 5, paragraph [0033]	1-9

☒ Further documents are listed in the continuation of Box C.

* 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 application or patent 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

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/08432

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☒ Claims Nos.: 4
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/08432

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/0110120 A1 (WANG et al.) 26 May 2005 (25.05.2005), entire document, especially Abstract	1-9
A	US 2004/0248383 (WENG et al.) 09 December 2004 (09.12.2004), entire document, especially paragraph [0022]	1
A	US 2006/0022195 A1 (WANG) 02 February 2006 (02.02.2006), entire document	1-9