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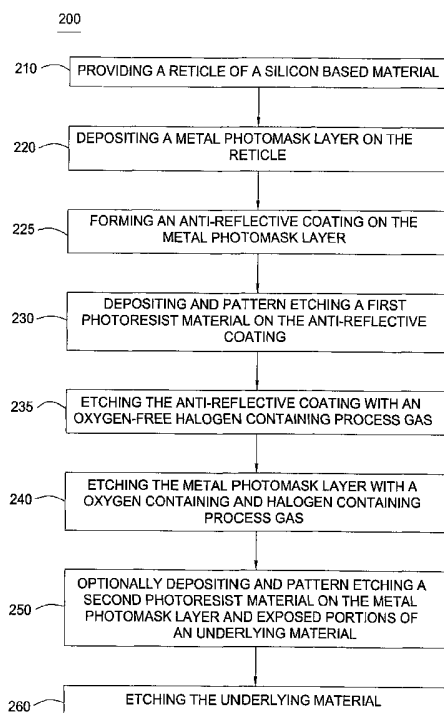
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(54) Title: MULTI-STEP PROCESS FOR ETCHING PHOTOMASKS



(57) Abstract: Method and apparatus for etching a metal layer disposed on a substrate, such as a photolithographic reticle, are provided. In one aspect, a method is provided for processing a photolithographic reticle including positioning the reticle on a support member in a processing chamber, wherein the reticle comprises a metal photomask layer formed on a silicon-based substrate, and a patterned resist material deposited on the silicon-based substrate, etching the substrate with an oxygen-free processing gas, and then etching the substrate with an oxygen containing processing gas.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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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)

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, INSPEC, IBM-TDB, PAJ, COMPENDEX, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 0 054 736 A (DAINIPPON PRINTING CO LTD) 30 June 1982 (1982-06-30) examples 3,4	1, 3-10, 12, 14-22, 24-30
A	US 6 472 107 B1 (CHAN DAVID Y) 29 October 2002 (2002-10-29)	
A	MOHRI H ET AL: "Manufacturing of half-tone phase shift masks: I. Blank" PROCEEDINGS OF THE SPIE - THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING USA, vol. 2254, 1994, pages 238-247, XP002313337 ISSN: 0277-786X	
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Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MIYASHITA H ET AL: "Manufacturing of half-tone phase shift masks: II. Writing and process" PROCEEDINGS OF THE SPIE - THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING USA, vol. 2254, 1994, pages 248-260, XP002313338 ISSN: 0277-786X -----	

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