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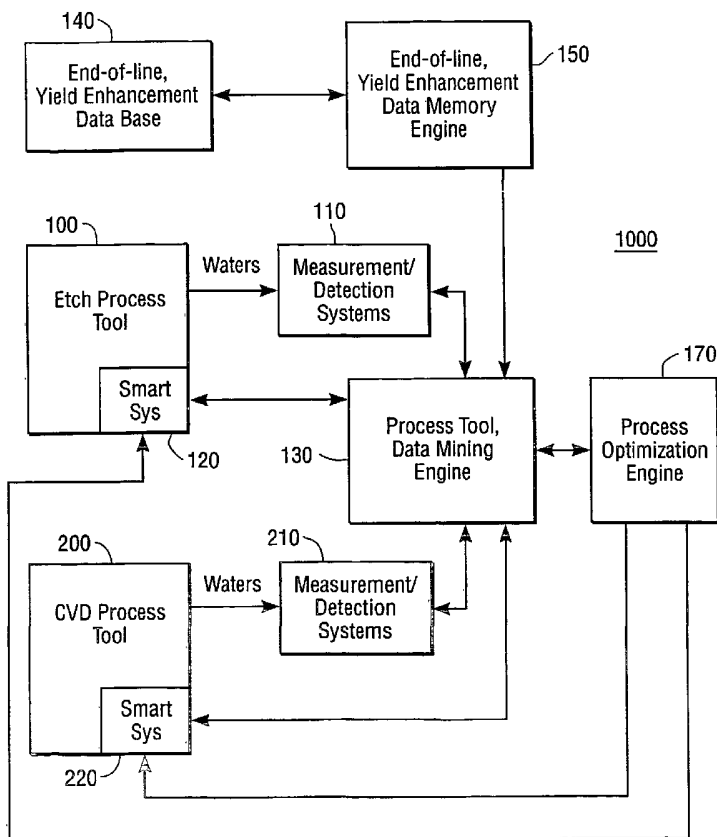
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(54) Title: CORRELATION OF END-OF-LINE DATA MINING WITH PROCESS TOOL DATA MINING



(57) Abstract: One embodiment of the present invention is a process tool optimization system that includes: (a) a data mining engine that analyzes end-of-line yield data to identify one or more process tools associated with low yield; and (b) in response to output from the analysis, analyzes process tool data from the one or more process tools to identify one or more process tool parameters associated with the low yield.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H01L21/66 H01L21/00				
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 H01L				
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				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
P, X	WO 02 33745 A (APPLIED MATERIALS INC) 25 April 2002 (2002-04-25) the whole document ---	1-29		
X	DE 100 32 322 A (NICKOLSON MARK) 17 January 2002 (2002-01-17) the whole document & US 6 580 960 B1 (NICHOLSON MARK) 17 June 2003 (2003-06-17) column 1, line 20 -column 3, line 47; figure 1 ---	1-29		
X	US 2002/022937 A1 (FUNAKOSHI HARUO) 21 February 2002 (2002-02-21) paragraphs '0043!-'0045!', '0053!', '0054!; figure 2 ---	1-29		
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<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. </td> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Patent family members are listed in annex. </td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.	<input checked="" type="checkbox"/> Patent family members are listed in annex.
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° Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> <ul style="list-style-type: none"> *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 </td> <td style="width: 50%; border: none; vertical-align: top;"> <ul style="list-style-type: none"> *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 </td> </tr> </table>			<ul style="list-style-type: none"> *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 	<ul style="list-style-type: none"> *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
<ul style="list-style-type: none"> *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 	<ul style="list-style-type: none"> *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 <p style="text-align: center; font-size: 1.2em;">24 November 2003</p>		Date of mailing of the international search report <p style="text-align: center; font-size: 1.2em;">02/12/2003</p>		
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 <p style="text-align: center; font-size: 1.2em;">Schumacher, H</p>		

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/08797

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WILSON D ET AL: "Automatic in-line to end-of-line defect correlation using FSRAM test structure for quick killer defect identification" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS). SAN DIEGO, MAR. 22 - 25, 1994, NEW YORK, IEEE, US, 22 March 1994 (1994-03-22), pages 160-163, XP010119608 ISBN: 0-7803-1757-2 page 160, left-hand column, paragraph 4 -page 162, right-hand column, paragraph 1 -----	1,15,29

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Information on patent family members

International Application No

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