

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 September 2004 (30.09.2004)

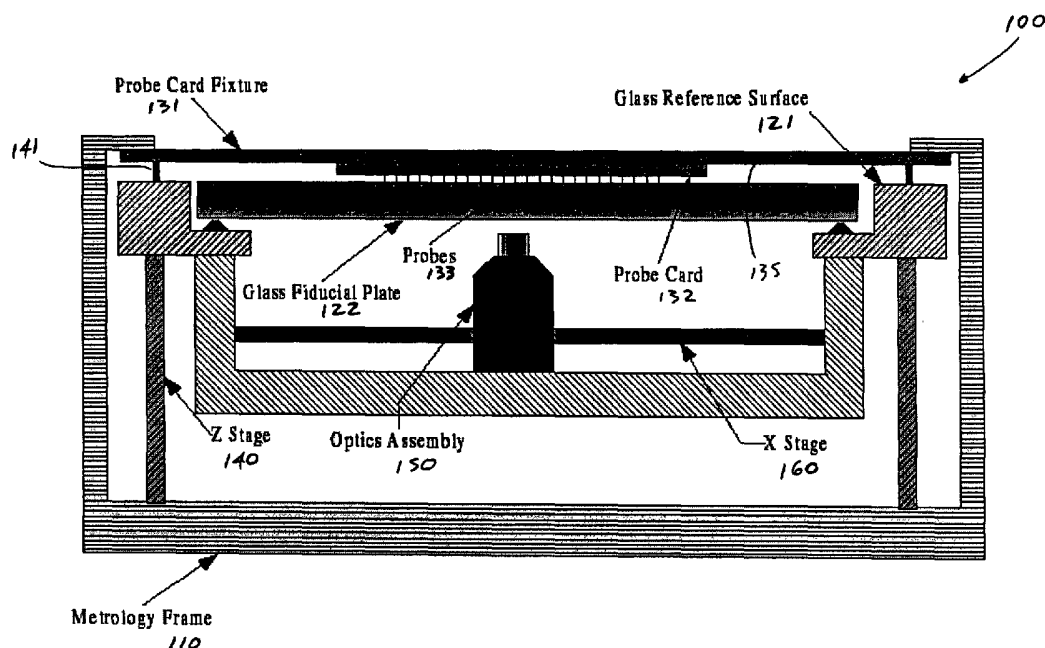
PCT

(10) International Publication Number
WO 2004/083980 A3

- (51) International Patent Classification⁷: G01R 31/316, 3/00
- (21) International Application Number: PCT/US2004/007818
- (22) International Filing Date: 12 March 2004 (12.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/454,574 14 March 2003 (14.03.2003) US
- (71) Applicant (for all designated States except US): APPLIED PRECISION, LLC [US/US]; 1040 12th Avenue, N.W., Issaquah, WA 98027 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): STROM, John, T. [US/US]; 1547 S.W. 12th Court, North Bend, WA 98045 (US). KRAFT, Raymond, H. [US/US]; 5511 17th Avenue N.E., Seattle, WA 98105 (US).
- (74) Agents: CASTELLUCCI, Victor, J. et al.; Pillsbury Winthrop, LLP, 11682 El Camino Real, Suite 200, Carmel Valley, CA 92130-1593 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD OF MITIGATING EFFECTS OF COMPONENT DEFLECTION IN A PROBE CARD ANALYZER



(57) Abstract: A system and method of mitigating the effects of component deflections in a probe card analyzer system may implement three-dimensional comparative optical metrology techniques to model deflection characteristics. An exemplary system and method combine non-bussed electrical planarity measurements with fast optical planarity measurements to produce "effectively loaded" planarity measurements.

WO 2004/083980 A3



Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

4 November 2004

INTERNATIONAL SEARCH REPORT

International Application No
T/US2004/007818

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01R31/316 G01R3/00

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 G01R

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, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 553 (P-1625), 5 October 1993 (1993-10-05) -& JP 05 157790 A (TOKYO KASOODE KENKYUSHO:KK), 25 June 1993 (1993-06-25) abstract -----	1,8,15
A	DE 200 04 439 U (APPLIED PRECISION INC) 5 October 2000 (2000-10-05) the whole document	1,8,15
E	& US 6 710 798 B1 (KILLEEN TIMOTHY S ET AL) 23 March 2004 (2004-03-23) -----	1,8,15
A	US 5 657 394 A (SCHWARTZ RODNEY E ET AL) 12 August 1997 (1997-08-12) abstract ----- -/--	1,8,15

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>	<p>*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</p> <p>*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</p> <p>*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.</p> <p>*&* document member of the same patent family</p>
--	--

Date of the actual completion of the international search 3 September 2004	Date of mailing of the international search report 28/09/2004
--	---

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 Hijazi, A
--	--

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/007818

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 6 002 426 A (MIROWSKI JOSEPH A ET AL) 14 December 1999 (1999-12-14) abstract -----	1,8,15
A	US 6 043 668 A (CARNEY ERIC LANE) 28 March 2000 (2000-03-28) abstract -----	1,8,15
A	US 6 040 700 A (BERAR ANDREI) 21 March 2000 (2000-03-21) column 3, line 49 - line 65; figure 2 -----	1,8,15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/007818

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
JP 05157790	A	25-06-1993	JP 7056498 B	14-06-1995
DE 20004439	U	05-10-2000	US 6710798 B1 DE 20004439 U1 JP 2000298142 A	23-03-2004 05-10-2000 24-10-2000
US 6710798	B1	23-03-2004	DE 20004439 U1 JP 2000298142 A	05-10-2000 24-10-2000
US 5657394	A	12-08-1997	WO 9429816 A1 US 6118894 A	22-12-1994 12-09-2000
US 6002426	A	14-12-1999	NONE	
US 6043668	A	28-03-2000	NONE	
US 6040700	A	21-03-2000	NONE	