

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 September 2007 (20.09.2007)

PCT

(10) International Publication Number
WO 2007/106657 A3

(51) International Patent Classification:
G01J 1/20 (2006.01) **G01B 11/02** (2006.01)
G06K 9/36 (2006.01)

(21) International Application Number:
PCT/US2007/062809

(22) International Filing Date:
26 February 2007 (26.02.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/782,679 14 March 2006 (14.03.2006) US

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(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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, 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, IS, IT, LT, LU, LV, 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).

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

(88) Date of publication of the international search report:
23 October 2008



WO 2007/106657 A3

(54) Title: SPATIAL FREQUENCY WAVEFRONT SENSOR SYSTEM AND METHOD

(57) Abstract: Devices systems, and methods can characterize an optical surface of an object. A wavefront sensor system focuses light energy propagating from the object to form a pattern on a detector. The system maps the pattern to an array with a transform function such as a Fourier transform. The values of array correspond to characteristic locations and signals in a transform space, for example an intensity of spatial frequency signals in frequency space. The characteristic location and intensity of these signals in transform space are used to measure the optical surface. For example, a characteristic frequency of a spatial frequency intensity peak in Fourier transform space can be used to estimate the location of spots on the detector. Alternatively, the characteristics can be used to the measure sphere, cylinder and axis of a wavefront, wavefront elevation maps and point spread functions, often without locating positions of individual spots on the detector.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/62809

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **G01J 1/20(2006.01);G06K 9/36(2006.01);G01B 11/02(2006.01)**

USPC: 250/201.9;382/280;356/512
 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)
 U.S. : 250/201.9; 382/280; 356/512; 606/4-6

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 practicable, search terms used)
 EAST

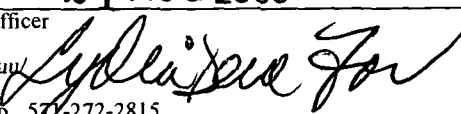
C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0007603 A1 (ARIELI et al.) 13 January 2005 (13.01.2005), Figs. 1 and 2.	1, 3, 7, 8, 15-17
X	US 2005/0012898 A1 (CHERNYAK et al.) 20 January 2005 (20.01.2005), Figs. 1-5.	1-3, 6, 7, 11, 15-17
X	US 3,993,976 A (GINSBURG) 23 November 1976 (23.11.1976), Figs. 1-9.	1, 3-5, 7-11, 15-17

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 31 July 2008 (31.07.2008)	Date of mailing of the international search report 21 AUG 2008
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