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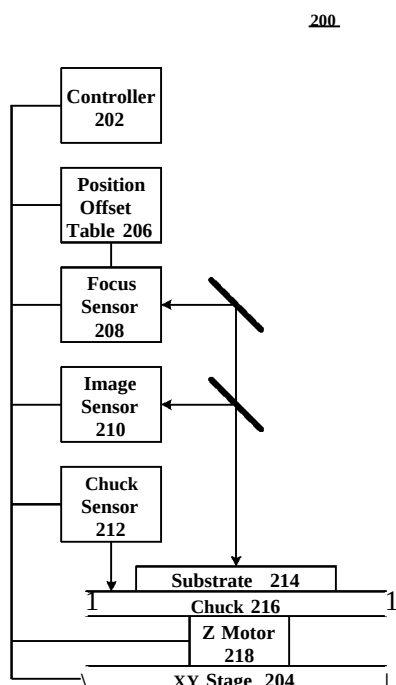


Fig. 2

(57) Abstract: A system for inspecting a constant layer depth relative to a particular device layer. The system has an image sensor with a fixed focal plane. A focus sensor senses the surface topography of the substrate and outputs a focus data stream. A stage moves the substrate in an XY plane, and a motor moves the substrate in a Z dimension. A controller operates the system in one of a setup mode and an inspection mode. In the setup mode the controller controls XY movement of the substrate so as to scan a first portion of the substrate. The controller receives the focus data stream, concurrently receives XY data, and stores correlated XYZ data for the substrate. In the inspection mode the controller controls XY movement of the substrate so as to scan a second portion of the substrate. The controller receives the focus data stream, concurrently receives XY data, and subtracts the stored Z data from the focus data stream to produce a virtual data stream. The controller feeds the virtual data stream plus an offset to the motor for moving the substrate up and down during the inspection, thereby holding the focal plane at a desired Z distance, regardless of the surface topography of the substrate.

ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/042231**A. CLASSIFICATION OF SUBJECT MATTER****GOIB II/30(2006.01)i, G01N 21/88(2006.01)i**

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)

GOIB 11/30; GOIB 11/24; G03B 27/42; GOIB 11/06; G01N 21/956; GOIB 11/00; G02B 27/40

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: auto focus, inspection, controller, substract, difference, Z motor, and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2006-258444 A (OPCELL CO LTD) 28 September 2006 See abstract , claims 1-8 , and figures 1-20 .	1-18
A	US 7012672 B2 (TASJA, V. R. et al.) 14 March 2006 See abstract , claims 1-36 , and figures 1-4 .	1-18
A	US 7142315 B1 (STEVE, R. L. et al.) 28 November 2006 See abstract , claims 1-18 , and figures 1-5 .	1-18
A	JP 2000-266691 A (OLYMPUS OPTICAL CO LTD) 29 September 2000 See abstract , claims 1-3 , and figures 1-6 .	1-18

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

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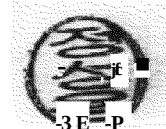
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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