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- (72) Inventor: **PETTIBONE, Donald**; 4805 McCoy Ave, San Jose, California 95130 (US).
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- (74) Agent: **MCANDREWS, Kevin** et al.; Kla-tencor Corporation, Legal Department, One Technology Drive, Milpitas, California 95035 (US).
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- (71) Applicant: **KLA-TENCOR CORPORATION** [US/US];
Legal Department, One Technology Drive, Milpitas, California 95035 (US).

(54) Title: A MULTIPLE WORKING DISTANCE HEIGHT SENSOR USING MULTIPLE WAVELENGTHS

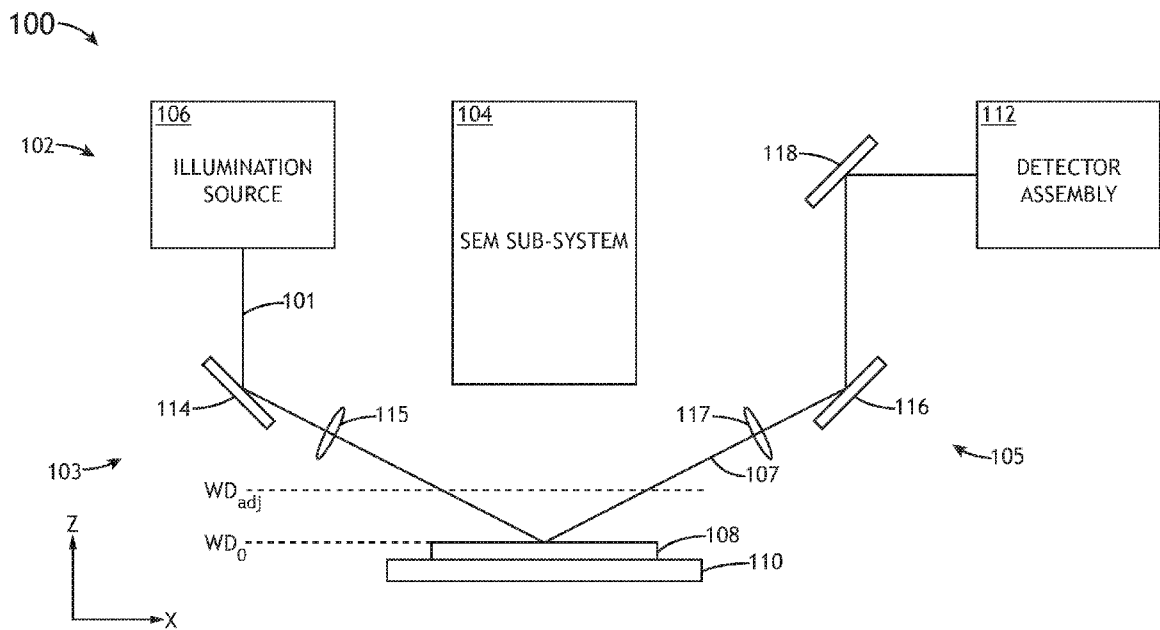


FIG. 1

(57) Abstract: A system is disclosed. The system includes a stage assembly configured to receive a specimen and maintain a height of the specimen at a first working distance height during a first characterization mode and an additional working distance height during an additional characterization mode. The system further includes an illumination source configured to generate an illumination beam. The system further includes an illumination arm including a set of optical elements configured to direct a portion of the illumination beam including illumination of a first wavelength to the specimen during the first characterization mode, and direct a portion of the illumination beam including illumination of an additional wavelength to the specimen during the additional characterization mode. The system further includes a detector assembly configured to receive illumination emanated from the specimen, and a controller configured to determine a specimen height value based on the illumination received by the detector assembly.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G01B 11/06; F21V 8/00; G01B 11/14; G01B 11/24; G01N 2186; G01N 23/223; G01N 23/225; G01V 800; G01B 11/02

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: SEM, height, first characterization mode, additional characterization mode, controller

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-048740 A (SHIMADZU CORP. et al.) 15 February 2002 paragraphs [0012]-[0018] and figure 1	1-5, 7-14, 16-20
A		6, 15
Y	KR 10-1794641 B1 (L-FUSION OPTICS INC.) 07 November 2017 paragraphs [0055]-[0058], [0071], [0082] and figure 3b	1-5, 7-14, 16-20
A	US 7499185 B2 (NOMARU et al.) 03 March 2009 claims 1, 2 and figure 3	1-20
A	US 6597006 B1 (MCCORD et al.) 22 July 2003 claim 1 and figures 2a-2c	1-20
A	JP 2010-071969 A (SII NANOTECHNOLOGY INC.) 02 April 2010 paragraphs [0019]-[0027] and figures 1-3	1-20

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

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Korean Intellectual Property Office

189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea

Facsimile No. +82-42-481-8578

Authorized officer

LEE, Hun Gil

Telephone No. +82-42-481-8525



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