

18 Documents

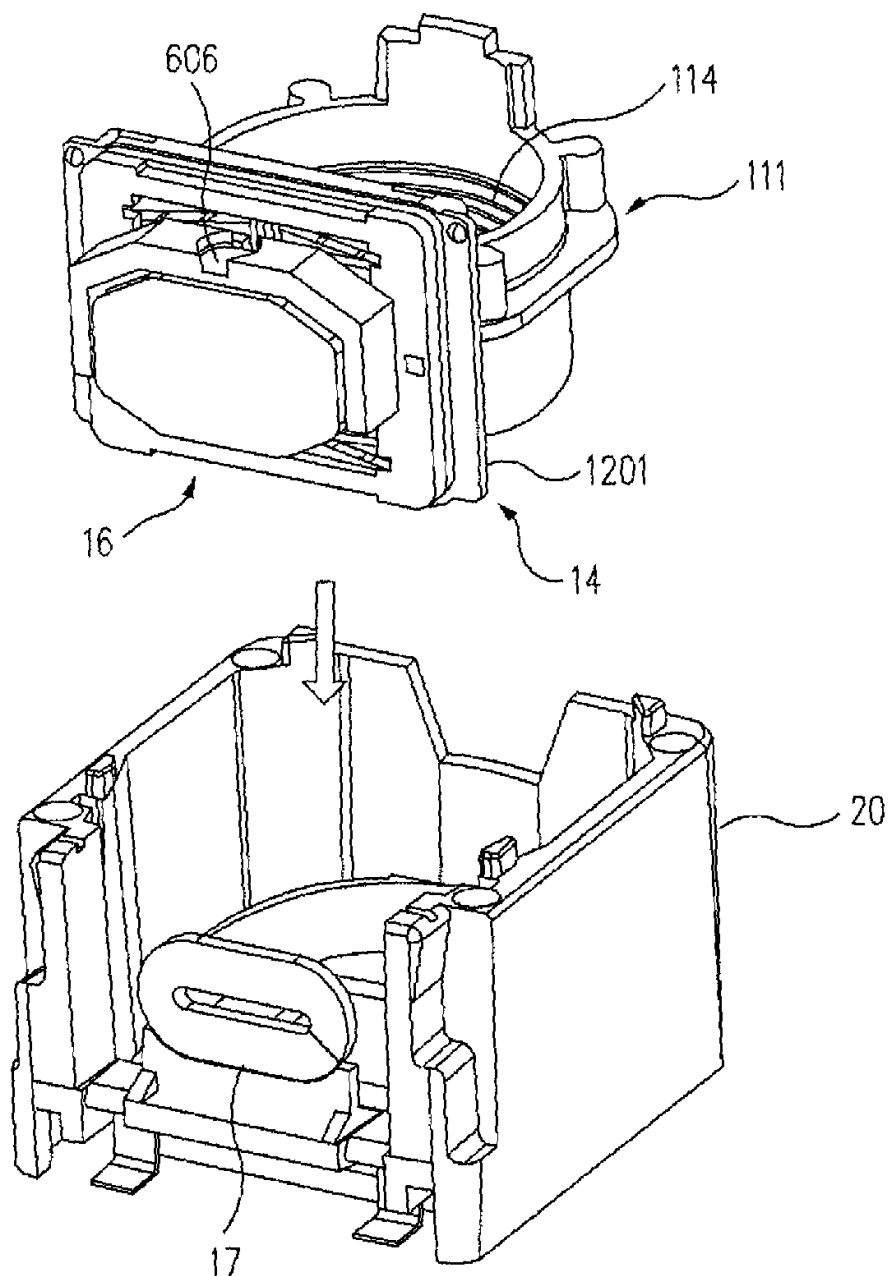
Publication numbers	Title	Current assignees
US20060193616 A1	Shutter for miniature camera	DIGITALOPTICS MEMS
US20080285027 A1	Hyperspectral / Multispectral Dispersive System with Scanning Entry Slit Moving Across Lens Focus Plane	EMERGING TECHNOLOGIES
US20150075670 A1	Systems for producing precision magnetic coil windings	GENERAL ELECTRIC
US20150076271 A1	Systems for producing precision magnetic coil windings	GENERAL ELECTRIC
WO200921207 A2	Apparatus and method for wafer edge exclusion measurement	ACCRETECH
WO2007120491 A2	Wafer bevel inspection mechanism	RUDOLPH TECHNOLOGIES
KR20170069178 A	Multiple optics vision inspection system	APS
KR20150145056 A	UV Radiation Device Indicating Effective Radiation Area	JUEUN UV TECHNOLOGY
CN104535052 A	Lens array and pd array high-precision alignment mounting device and alignment method therefor	ACCELINK TECHNOLOGIES
US20090135418 A1	Apparatus for measuring spatially resolved the luminescence of semiconductor samples	WOLFF THOMAS
CN107498285 A	High-precision assembling device for assembly line	SHANGHAI SHENXIANG AUTOMATION TECHNOLOGY
WO201205661 A1	A checkout counter	ITAB SCANFLOW
US20080030731 A1	Automatic wafer edge inspection and review system	ACCRETECH
US20110199532 A1	Auto focus system and auto focus method	JIN JU
WO200763459 A1	Ink jet device and method for producing a biological assay substrate by releasing a plurality of substances onto the substrate	PHILIPS ELECTRONICS
US20100045986 A1	Imaging apparatus for imaging integrated circuits on an integrated circuit carrier	SILVERBROOK RESEARCH, ...
US20150211852 A1	Measurement equipment	ADVANCED SEMICONDUCTOR ENGINEERING
US20050007580 A1	Method and apparatus for locating/sizing contaminants on a polished planar surface of a dielectric or semiconductor material	SYNETICS SOLUTIONS, ...

Family 1/18 - FAMPAT - ©Questel

Title

(EP1987393)

Shutter for miniature camera

Images**Publication data including kind & date**

US20060193616	A1	2006-08-31	US20060193616
US20060193618	A1	2006-08-31	US20060193618
US20060193620	A1	2006-08-31	US20060193620
US20060193059	A1	2006-08-31	US20060193059
US20060193063	A1	2006-08-31	US20060193063
US20060192885	A1	2006-08-31	US20060192885
US20060192858	A1	2006-08-31	US20060192858
WO2006093934	A2	2006-09-08	WO200693934



US20060204242	A1	2006-09-14	US20060204242				
WO2006093934	A8	2006-11-02	WO200693934				
TW200700789	A	2007-01-01	TW200700789				
US20070133976	A1	2007-06-14	US20070133976				
WO2007101038	A2	2007-09-07	WO2007101038				
TW200739246	A	2007-10-16	TW200739246				
WO2006093934	A3	2007-12-21	WO200693934				
WO2006093934	A3	2007-12-27	WO200693934				
WO2006093934	A8	2008-02-07	WO200693934				
US20080044172	A1	2008-02-21	US20080044172				
US7345827	B1	2008-03-18	US7345827				
WO2007101038	A3	2008-04-03	WO2007101038				
WO2008067148	A1	2008-06-05	WO200867148				
US7403344	B2	2008-07-22	US7403344				
KR20080096845	A	2008-11-03	KR20080096845				
EP1987393	A2	2008-11-05	EP1987393				
US7495852	B2	2009-02-24	US7495852				
CN101410751	A	2009-04-15	CN101410751				
US7555210	B2	2009-06-30	US7555210				
US7565070	B1	2009-07-21	US7565070				
JP2009527803	A	2009-07-30	JP2009527803				
US7570882	B2	2009-08-04	US7570882				
US7646969	B2	2010-01-12	US7646969				
EP1987393	A4	2010-01-20	EP1987393				
US7660056	B1	2010-02-09	US7660056				
US7697829	B1	2010-04-13	US7697829				
US7747155	B1	2010-06-29	US7747155				
US7769284	B2	2010-08-03	US7769284				
US7792421	B1	2010-09-07	US7792421				
US7813634	B2	2010-10-12	US7813634				
US7838322	B1	2010-11-23	US7838322				
US8014662	B1	2011-09-06	US8014662				
US20110317013	A1	2011-12-29	US20110317013				
US8090252	B1	2012-01-03	US8090252				
CN101410751	B	2012-02-15	CN101410751B				
US20120063761	A1	2012-03-15	US20120063761				
US8184967	B2	2012-05-22	US8184967				
US8346074	B2	2013-01-01	US8346074				
US8391700	B1	2013-03-05	US8391700				
US20130128099	A1	2013-05-23	US20130128099				
US8682156	B2	2014-03-25	US8682156				
TWI437357	B	2014-05-11	TWI437357				
US20140184892	A1	2014-07-03	US20140184892				
TWI484245	B	2015-05-11	TWI484245				
US9291875	B2	2016-03-22	US9291875				
US20160202447	A1	2016-07-14	US20160202447				
US9625673	B2	2017-04-18	US9625673				
US20170343769	A1	2017-11-30	US20170343769				

US10203472

B2 2019-02-12 US10203472

Abstract

(EP1987393)

Systems and techniques for using one or more virtual pivots in a shutter system for a miniature camera. A virtual pivot system may comprise one or more flexures, so that a shutter apparatus may be rotated about a center of rotation without a physical rotation element at the center of rotation. The virtual pivot system may provide a number of benefits, including the reduction or elimination of stiction.

Inventors

GUTIERREZ ROMAN C

CALVET ROBERT J

Latest standardized assignees - inventors removed

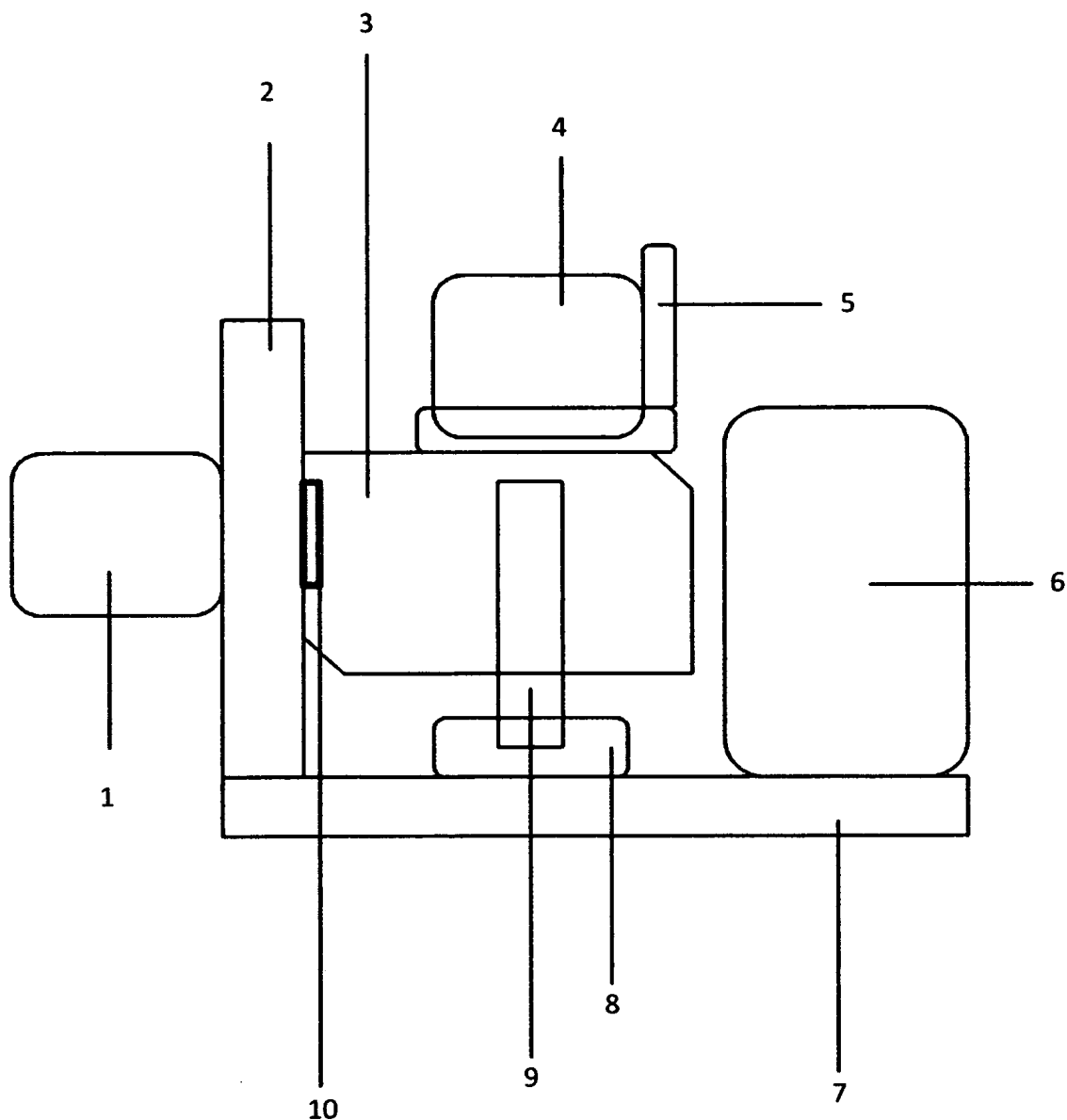
DIGITALOPTICS MEMS

Family 2/18 - FAMPAT - ©Questel

Title

(US20080285027)

Hyperspectral / Multispectral Dispersive System with Scanning Entry Slit Moving Across Lens Focus Plane

Images

US20080285027

A1 2008-11-20

US20080285027

Abstract

(US20080285027)

Most scanning systems today employ the conventional prior art method of using mirrors, moving the lens, rotating the slit, and moving the internal optics of the system. This system moves the slit plane across the projected focal plane that is formed by the fore/objective lens. The basic system includes a camera/sensor, a dispersive spectrograph with entrance slit, a computer with control software, an encoded stage and/or motor control, an objective lens, a computer, and an enclosure. The system works as a stationary enclosure with internal moving parts. The spectrograph and camera are moved in precision by a linear stage in the vertical or horizontal plane depending on whether the slit is vertically set or horizontally set. The precision movement of the assembly is controlled via an intelligent motor controller interface and customized software.

Inventors

LANOUE MARK ALLEN

Latest standardized assignees - inventors removed

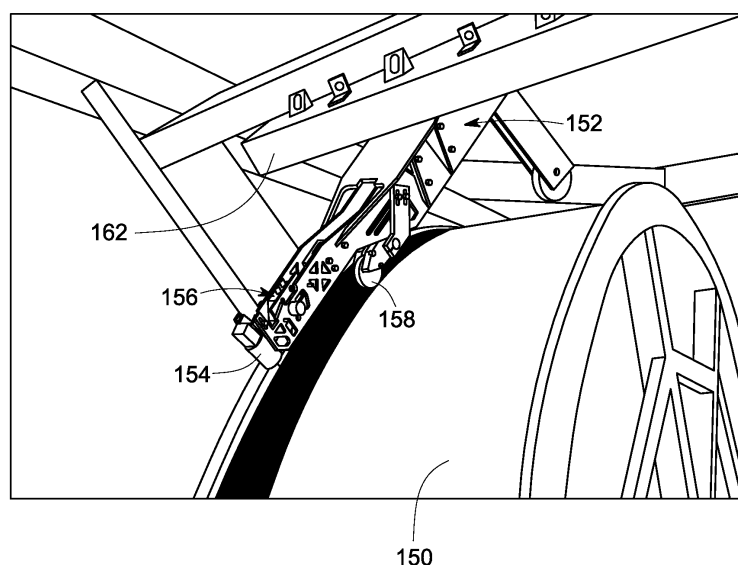
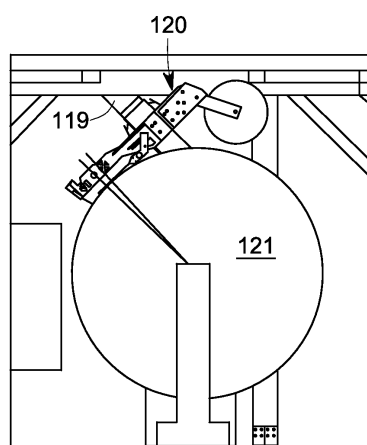
EMERGING TECHNOLOGIES

Family 3/18 - FAMPAT - ©Questel

Title

(US9201128)

Systems for producing precision magnetic coil windings

Images**Publication data including kind & date**

US20150075670

A1 2015-03-19

US20150075670

US9201128

B2 2015-12-01

US9201128

**Abstract**

(US9201128)

A system for producing precision magnetic coil windings is provided. The system includes a wire disposing assembly having a support, an axial traverser sub-assembly, and a support arm. The support is configured to receive a plurality of turns of a wire. The axial traverser sub-assembly is operatively coupled to the support. The support arm includes a wire disposing device. The system further includes a linear stage, a monitoring unit, a feedback unit, and a controller unit. The linear stage is operatively coupled to the support arm. Moreover, the controller unit is configured to axially position an incoming portion of the wire and provide reference trajectories for tracking.

Inventors

BONANNI PIERINO GIANNI

THOMPSON PAUL ST MARK SHADFORTH

LEE MARTIN KIN-FEI

IMMER CHRISTOPHER DARBY

DEMUTH RUSSELL STEPHEN

JANSSEN JONATHAN SEBASTIAN

JOHNSON DANNY WILLIAM

LASKARIS EVANGELOS TRIFON

QUIRION OWEN SCOTT

Latest standardized assignees - inventors removed

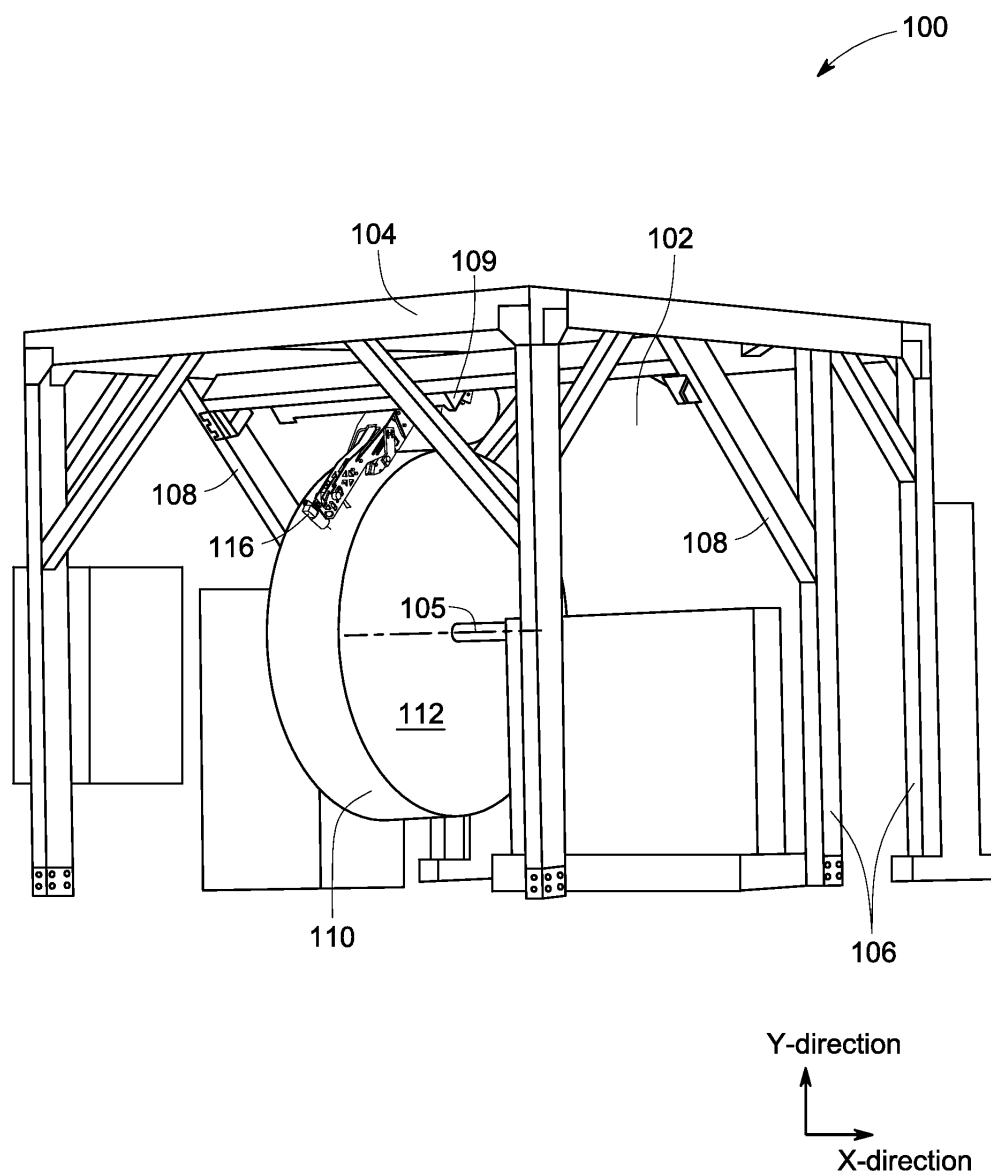
GENERAL ELECTRIC

Family 4/18 - FAMPAT - ©Questel

Title

(US9305703)

Systems for producing precision magnetic coil windings

Images**Publication data including kind & date**

US20150076271	A1	2015-03-19	US20150076271
US9305703	B2	2016-04-05	US9305703

**Abstract**

(US9305703)

A wire disposing assembly having a support, an axial traverser sub-assembly, a support arm, and a **linear stage** is provided. The support is configured to receive a plurality of turns of a wire, where the support is configured to rotate. The axial traverser sub-assembly is operatively coupled to the support. Further, a rate of motion of the axial traverser sub-assembly is coupled to a speed of rotation of the support. The support arm includes a resin unit configured to dispose resin on at least a portion of the wire, and a wire disposing device configured to guide a portion of the wire being disposed on a surface of the support. The **linear stage** is operatively coupled to the support arm.

Inventors

BONANNI PIERINO GIANNI

THOMPSON PAUL ST MARKSHADFORTH

LEE MARTIN KIN-FEI

IMMER CHRISTOPHER DARBY

DEMUTH RUSSELL STEPHEN

JANSSEN JONATHAN SEBASTIAN

JOHNSON DANNY WILLIAM

LASKARIS EVANGELOS TRIFON

QUIRION OWEN SCOTT

Latest standardized assignees - inventors removed

GENERAL ELECTRIC

Family 5/18 - FAMPAT - ©Questel

Title

(WO200921207)

Apparatus and method for wafer edge exclusion measurement

Images

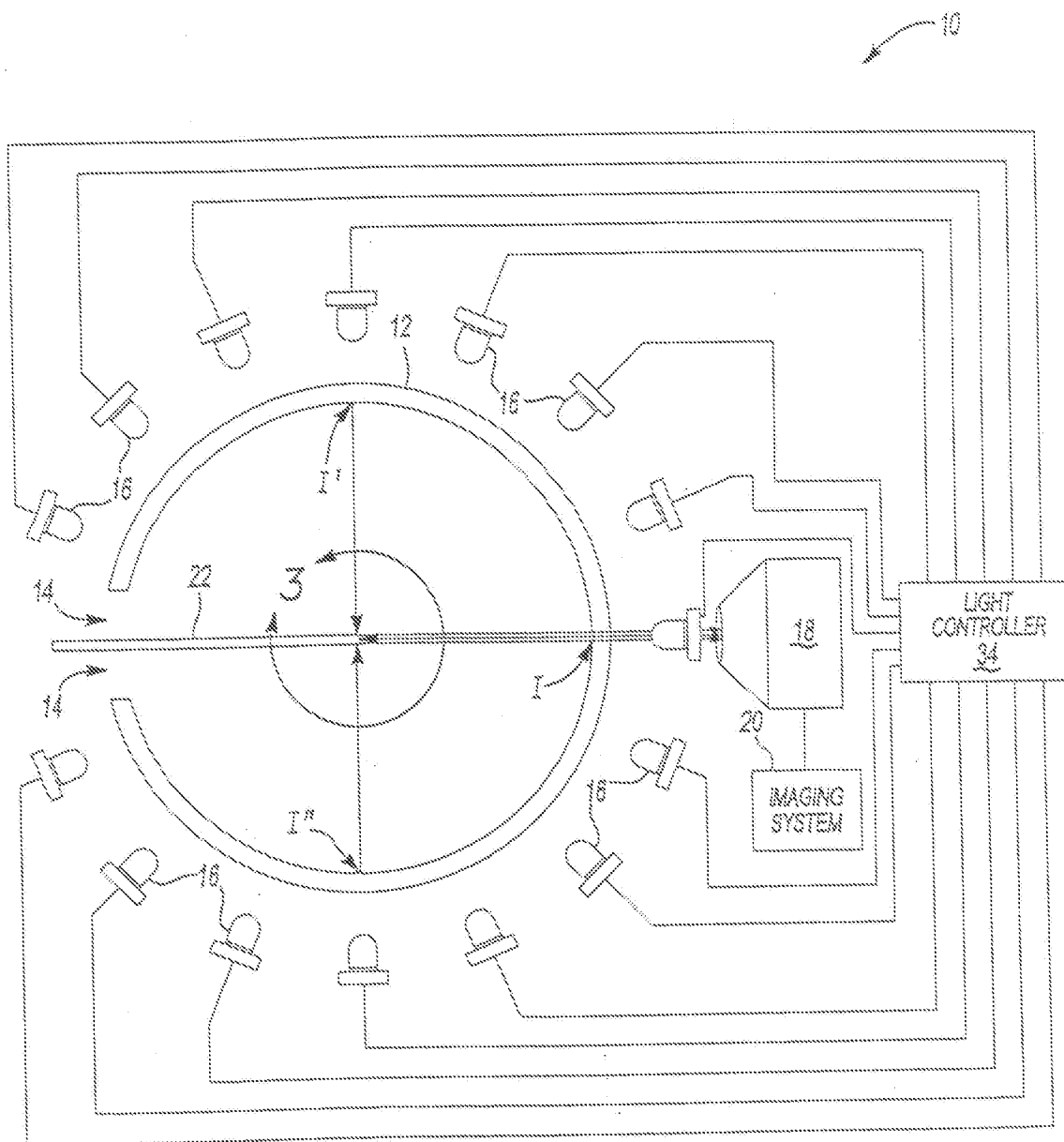


Fig-2

Publication data including kind & date

WO2009021207	A2	2009-02-12	WO200921207
WO2009021207	A3	2009-04-02	WO200921207



Abstract

(WO200921207)

A substrate illumination and inspection system provides for illuminating and inspecting a substrate particularly the substrate edge. The system uses a light diffuser with a plurality of lights disposed at its exterior or interior for providing uniform diffuse illumination of a substrate. An optic and imaging system exterior of the light diffuser are used to inspect the plurality of surfaces of the substrate including specular surfaces. An automatic defect characterization processor is provided.

Inventors

JIN JU
SADAM SATISH
VERMA VISHAL
HUANG ZHIYAN

LIN SIMING

ROBBINS MICHAEL D

FORDERHASE PAUL F

Latest standardized assignees - inventors removed

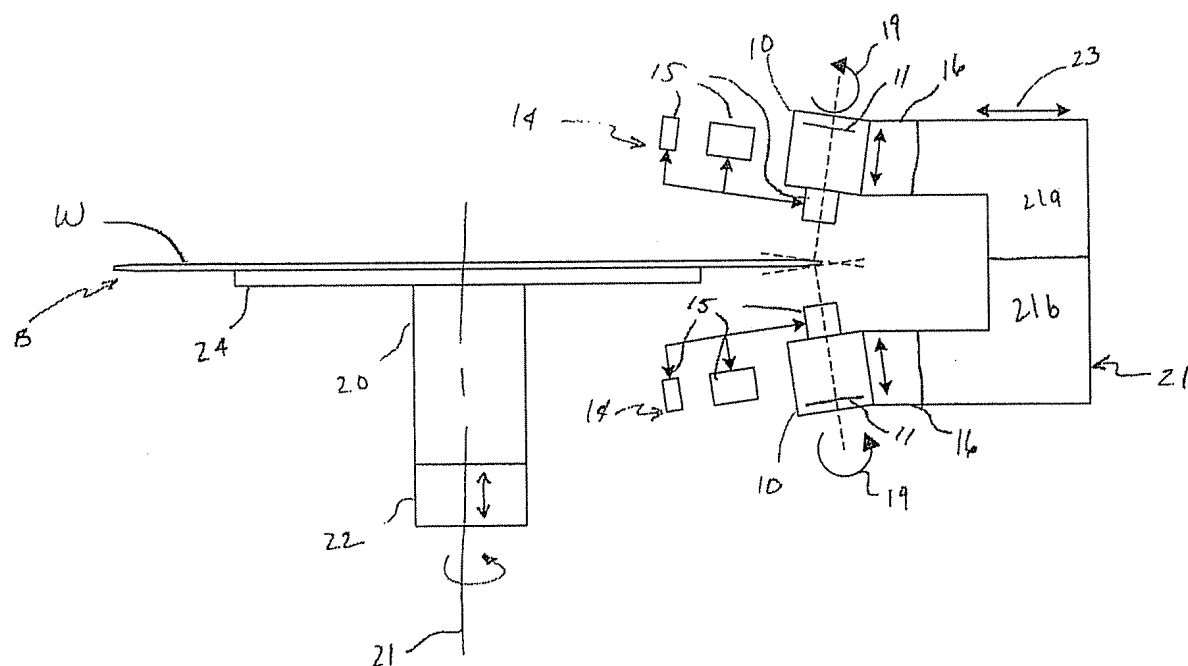
ACCRETECH

Family 6/18 - FAMPAT - ©Questel

Title

(WO2007120491)

Wafer bevel inspection mechanism

Images**Publication data including kind & date**

WO2007120491	A2	2007-10-25	WO2007120491
TW200802666	A	2008-01-01	TW200802666
WO2007120491	A3	2008-04-24	WO2007120491
CN101467023	A	2009-06-24	CN101467023
US20090161094	A1	2009-06-25	US20090161094
CN101467023	B	2011-08-17	CN101467023B

**Abstract**

(WO2007120491)

An imaging **sensor** for capturing images of the beveled surface of a wafer edge is herein disclosed. The imaging **sensor** is aligned with the edge of a wafer to maximize the area of the bevel that is encompassed by the depth of view of the imaging **sensor**. One or more **sensors** may be used to capture images of the wafer edge.

Inventors

WATKINS CORY

Latest standardized assignees - inventors removed

RUDOLPH TECHNOLOGIES

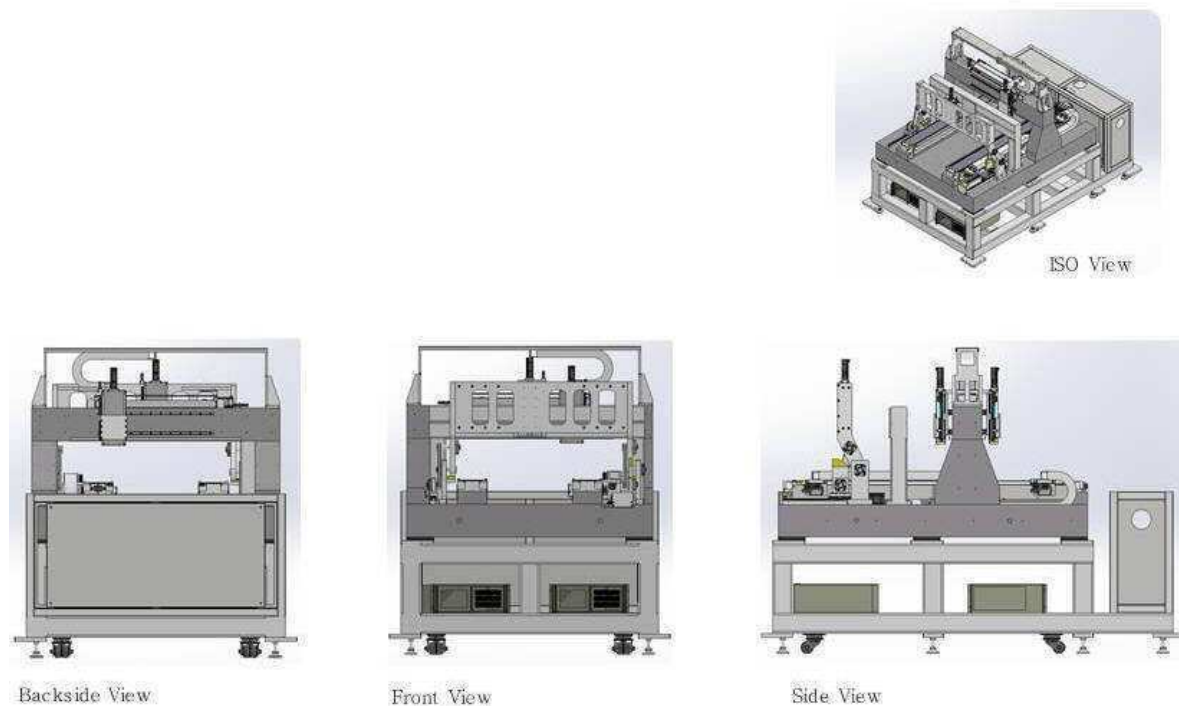
Family 7/18 - FAMPAT - ©Questel

Title

(KR101772673)

Multiple optics vision inspection system

Images

**Publication data including kind & date**

KR20170069178	A	2017-06-20	KR20170069178
KR101772673	B1	2017-08-29	KR101772673

**Abstract**

(KR101772673)

The present invention relates to a multiple optical module vision inspection system, wherein inspection equipment comprises vibration proof facilities having an air cylinder structure to reduce vibration, a stage unit transfer module, and a tool unit with respect to a sample product having various shapes and sizes in a field of a semiconductor material and a display material. Moreover, with optical lighting and a vision inspection system, a defect such as a foreign substance, a scratch, a pattern error, or the like of a product to be inspected is detected to sort out defective products. Therefore, the defective products can be reduced in a manufacturing process.

COPYRIGHT KIPO 2017

Inventors

KIM JEONG HUN

KIM YEONG CHEOL

Latest standardized assignees - inventors removed

APS

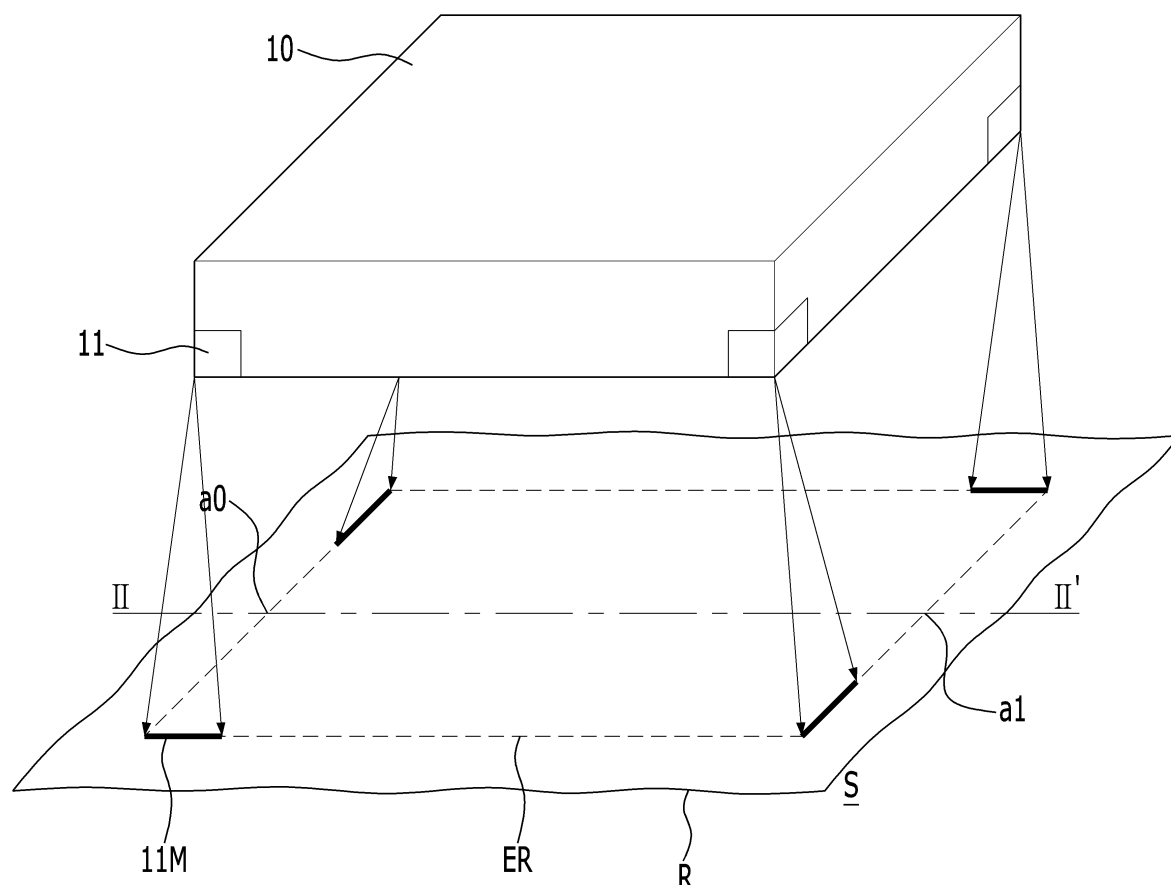
Family 8/18 - FAMPAT - ©Questel

Title

(KR101653043)

UV Radiation Device Indicating Effective Radiation Area

Images



Publication data including kind & date

[KR20150145056](#)

A

2015-12-29

KR20150145056

[KR101653043](#)

B1

2016-08-31

KR101653043



Abstract

(KR101653043)

Disclosed is an ultraviolet light radiating device for displaying an effective radiating area. The ultraviolet light radiating device according to the present invention comprises: an ultraviolet light radiating unit which has at least one ultraviolet light source, and radiates the ultraviolet light towards a stage; and a boundary display unit which displays at least portion in the boundary of the effective radiation area having substantially effective ultraviolet illumination in area in which ultraviolet light is radiated on the stage. The boundary of the effective radiation area can be a virtual line in which the ultraviolet illumination based on the stage surface shows a value selected in the range of 10% or more with respect to a maximum value of the ultraviolet illumination inside the effective radiation area.

Inventors

LEE KWANG SUK

LEE JUNG GEE

Latest standardized assignees - inventors removed

JUEUN UV TECHNOLOGY

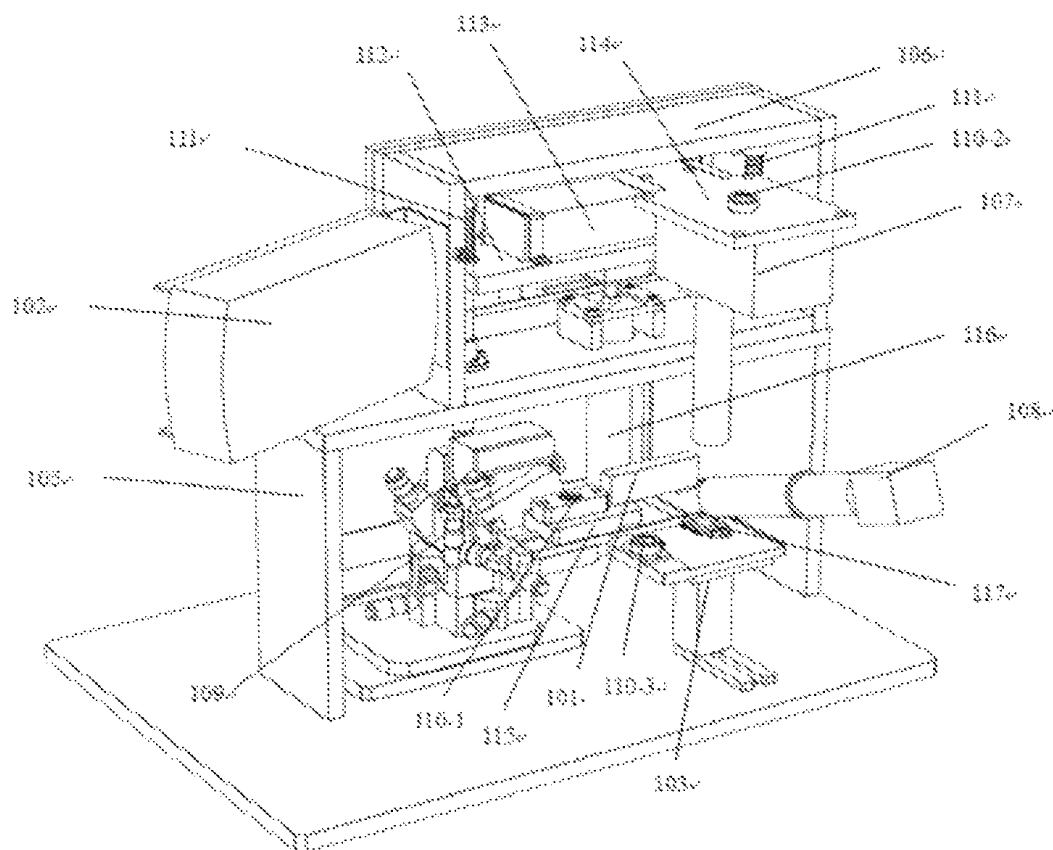
Family 9/18 - FAMPAT - ©Questel

Title

(WO201690661)

Lens array and pd array high-precision alignment mounting device and alignment method therefor

Images



Publication data including kind & date

CN104535052	A	2015-04-22	CN104535052
WO2016090661	A1	2016-06-16	WO2016090661
CN104535052	B	2017-02-22	CN104535052B
US20170343748	A1	2017-11-30	US20170343748
US9964717	B2	2018-05-08	US9964717



Abstract

(WO201690661)

A mounting alignment device for aligning a lens array and a PD array with high precision and an alignment method therefor, which can achieve the automation of lens mounting alignment. A telescopic rod of a stepping actuator (116) is adjusted until a photosensitive surface of a PD array (118) penetrates a lens array (121) and forms a clear image on an image capture CCD (107); an adjusted distance h_1 of the telescopic rod of the stepping actuator (116) is recorded; a **position** coordinate (x_n, y_n) of the circle centre of each circular photosensitive surface of the PD array (118) in an image is obtained; a slope k_1 of a connection line between the circle centres of the circular photosensitive surfaces is calculated; the stepping actuator (116) is adjusted again, so that the lens array (121) forms a clear image in an image capture CCD (107) view field; an adjusted distance h_2 of the telescopic rod of the stepping actuator (116) is recorded; a **position** coordinate (x'_n, y'_n) of the circle centre of a clear aperture of the lens array (121) corresponding to the PD array (118) is obtained; a slope k_2 of a connection line between the circle centres of the clear apertures of the lens array (121) is calculated; a value is calculated by means of $\Delta x_n, \Delta y_n$ and $\arctan(k_1) - \arctan(k_2)$; a high-precision fine-tuning frame (109) is adjusted to adjust the **position** of the lens array (121); and the steps are repeated until the following conditions are met: $\Delta x_n = \Delta y_n = 0$, and $k_1 = k_2$.

Inventors

SHI CHUAN

XI HUALI

JIANG XIONG

LIANG XUERUI

YIN HUALIN

MA WEIDONG

Latest standardized assignees - inventors removed

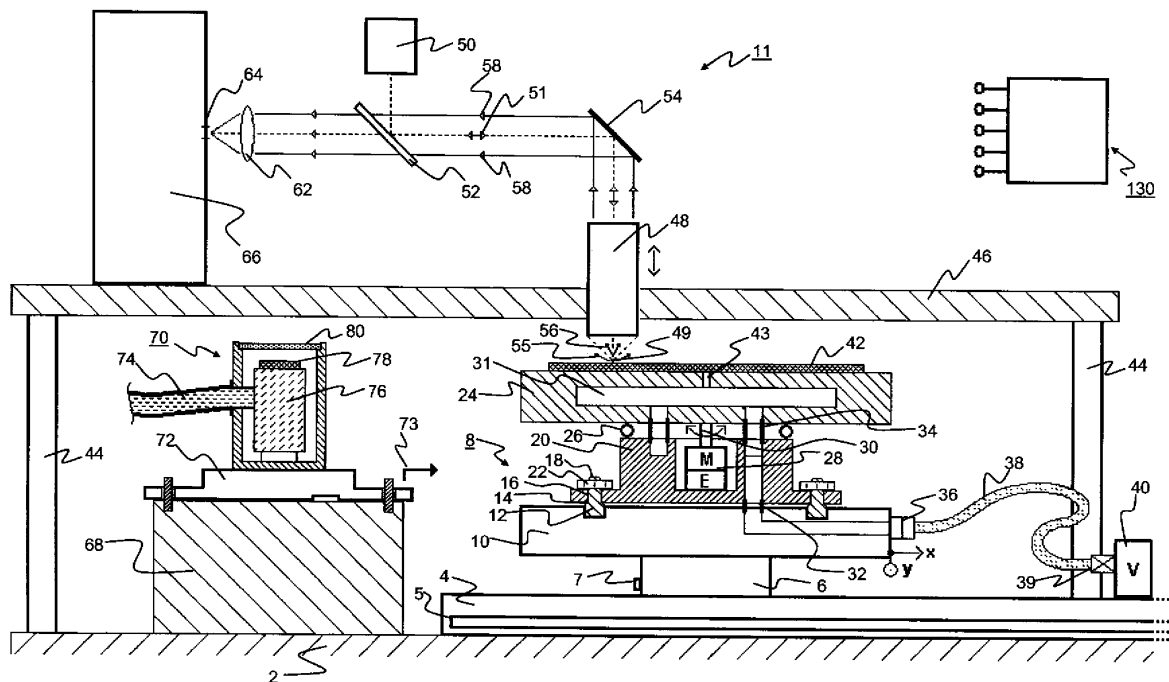
ACCELINK TECHNOLOGIES

Family 10/18 - FAMPAT - ©Questel

Title

(US7852473)

Apparatus for measuring spatially resolved the luminescence of semiconductor samples

Images**Publication data including kind & date**

US20090135418	A1	2009-05-28	US20090135418
DE102007056944	A1	2009-06-04	DE102007056944
US7852473	B2	2010-12-14	US7852473
DE102007056944	B4	2011-02-24	DE102007056944

**Abstract**

(US7852473)

An apparatus to measure spatially resolved the luminescence of a semiconductor sample, in particular a semiconductor wafer or any part thereof, includes a rotatable sample holder for the semiconductor sample. This rotatable sample holder is mounted on an xy stage, and a drive mechanism is used to rotate the sample holder rapidly during the measurement. A device excites luminescence light on the semiconductor sample, and an optical device guides a portion of the luminescence light to a detector. The surface of the semiconductor sample is located in the range of a focal point of the optical device. Using a fixation device, it is possible to remove the rotatable sample holder from the xy stage, when required, and to replace it by a cryostat with an optical window and a further semiconductor sample, so that the surface of the further semiconductor sample is essentially located in the focus point of optical device.

Inventors

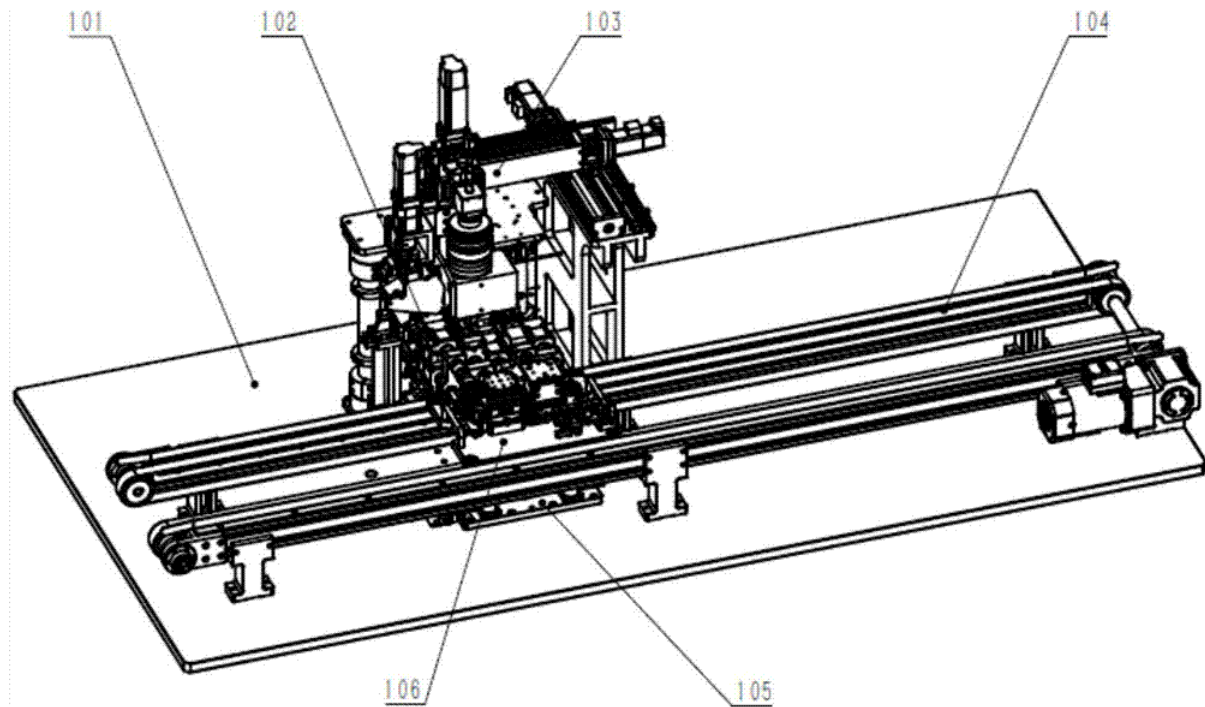
WOLFF THOMAS

Family 11/18 - FAMPAT - ©Questel

Title

(CN107498285)

High-precision assembling device for assembly line

Images**Publication data including kind & date**[CN107498285](#)

A

2017-12-22

CN107498285

**Abstract**

(CN107498285)

The invention discloses a high-precision assembling device for an assembly line. A workbench is a working area of a component connecting device and assembly line operation; the assembly line, a jacking locating mechanism, an engagement and disengagement driving mechanism and a detection module are fixed in a plane assembly line operation working area on the workbench through screws; the assembly line consists of two rail-type running devices arranged in the X-axis direction in parallel, and is an X-axis direction conveying device; and the jacking locating mechanism is arranged in the middle **position** between two rail-type running devices of the assembly lines. The high-precision assembling device for the assembly line can carry out precise assembly on precise spare parts, and has the advantages of high precision, little wear, stability of operation, simple structure, convenience in maintenance and low cost, so that the problems and defects which are mentioned in the background art are solved and overcome effectively.

Inventors

LÜ JUNHUI

MAO WEIQUAN

ZHU WENJUAN

Latest standardized assignees - inventors removed

SHANGHAI SHENXIANG AUTOMATION TECHNOLOGY

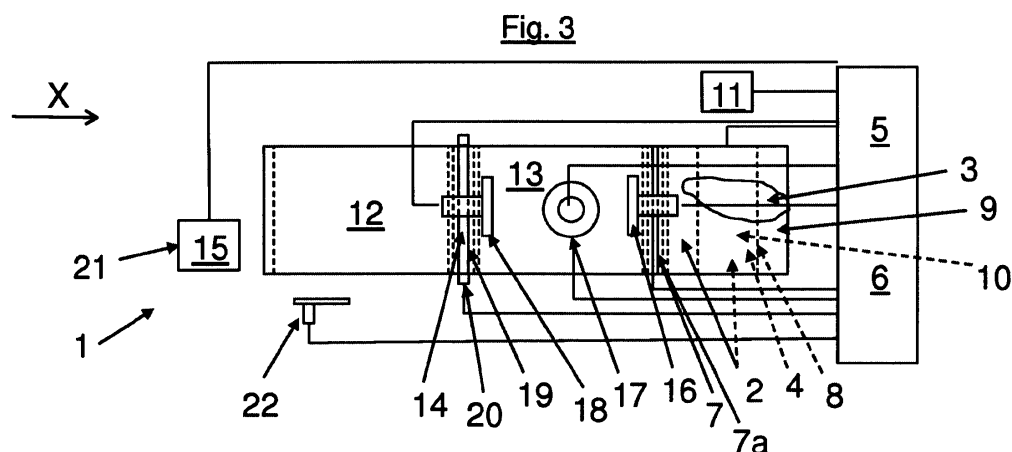
Family 12/18 - FAMPAT - ©Questel

Title

(WO201205661)

A checkout counter

Images



Publication data including kind & date

WO2012005661

A1 2012-01-12

WO201205661



Abstract

(WO201205661)

A classification device (2) for identification of articles (3) in an automated checkout counter is provided. The device comprises at least one conveyor belt (9, 12, 13), a memory unit (5) capable of storing digital reference signatures, each of which digital reference signatures corresponds to an article identity, at least one **sensor** probe (7a, 24a) connected to a **sensor** (7, 24) being configured to determine a measured signature of an article (3) being transported on said at least one conveyor belt (9, 12, 13), and a processor (6) connected to the memory unit (5) and being configured to compare said measured signature with the digital reference signatures, wherein said at least one **sensor** probe (7a, 24a) is moveable laterally relative said at least one conveyor belt (9, 12, 13).

Inventors

TOERNWALL MAGNUS

VON SYDOW CARL

MOELLER JOHAN

KOOI ERIK

BOITEN HUGO

Latest standardized assignees - inventors removed

ITAB SCANFLOW

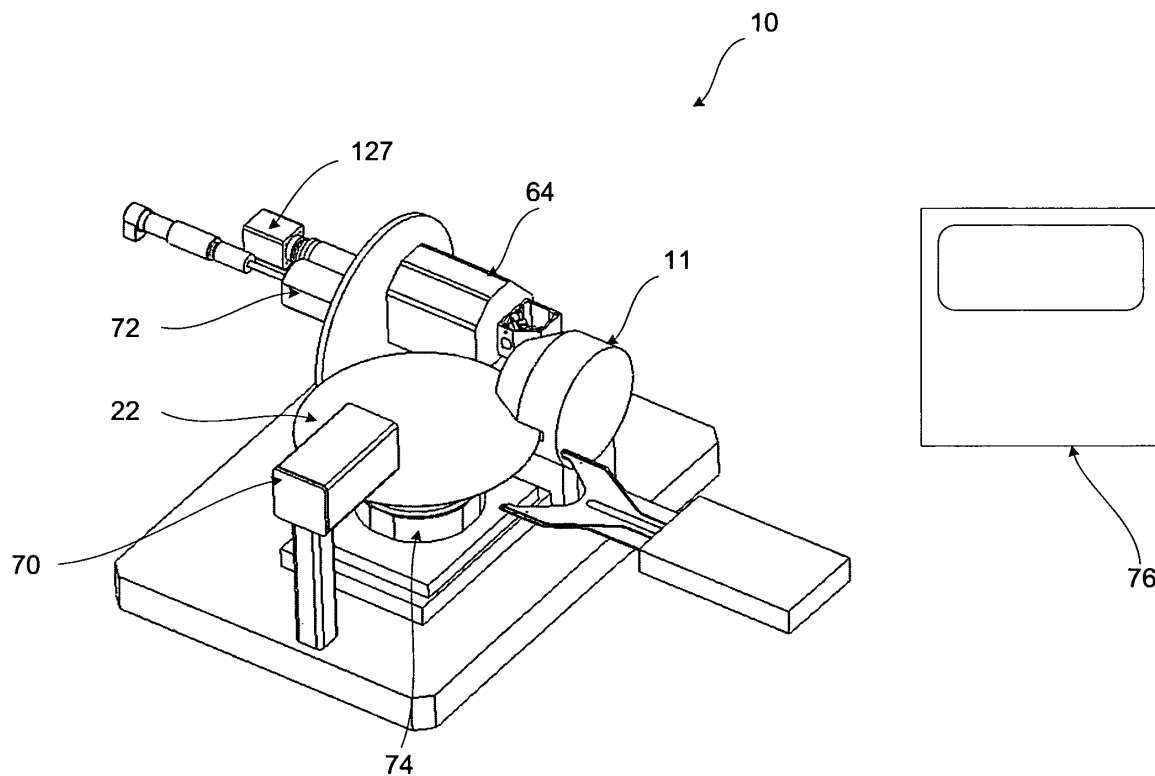
Family 13/18 - FAMPAT - ©Questel

Title

(WO200920456)

Automatic wafer edge inspection and review system

Images

**Publication data including kind & date**

US20080030731	A1	2008-02-07	US20080030731
WO2009020456	A1	2009-02-12	WO200920456
TW200908184	A	2009-02-16	TW200908184
US7508504	B2	2009-03-24	US7508504

**Abstract**

(WO200920456)

A substrate illumination and inspection system provides for illuminating and inspecting a substrate particularly the substrate edge. The system uses a light diffuser with a plurality of lights disposed at its exterior or interior for providing uniform diffuse illumination of a substrate. An optic and imaging system exterior of the light diffuser are used to inspect the plurality of surfaces of the substrate including specular surfaces. The optic can be rotated radially relative to a center point of the substrate edge to allow for focused inspection of all surfaces of the substrate edge.

Inventors

JIN JU
 SADAM SATISH
 VERMA VISHAL
 HUANG ZHIYAN
 LIN SIMING
 ROBBINS MICHAEL D
 FORDERHASE PAUL F

Latest standardized assignees - inventors removed

ACCRETECH

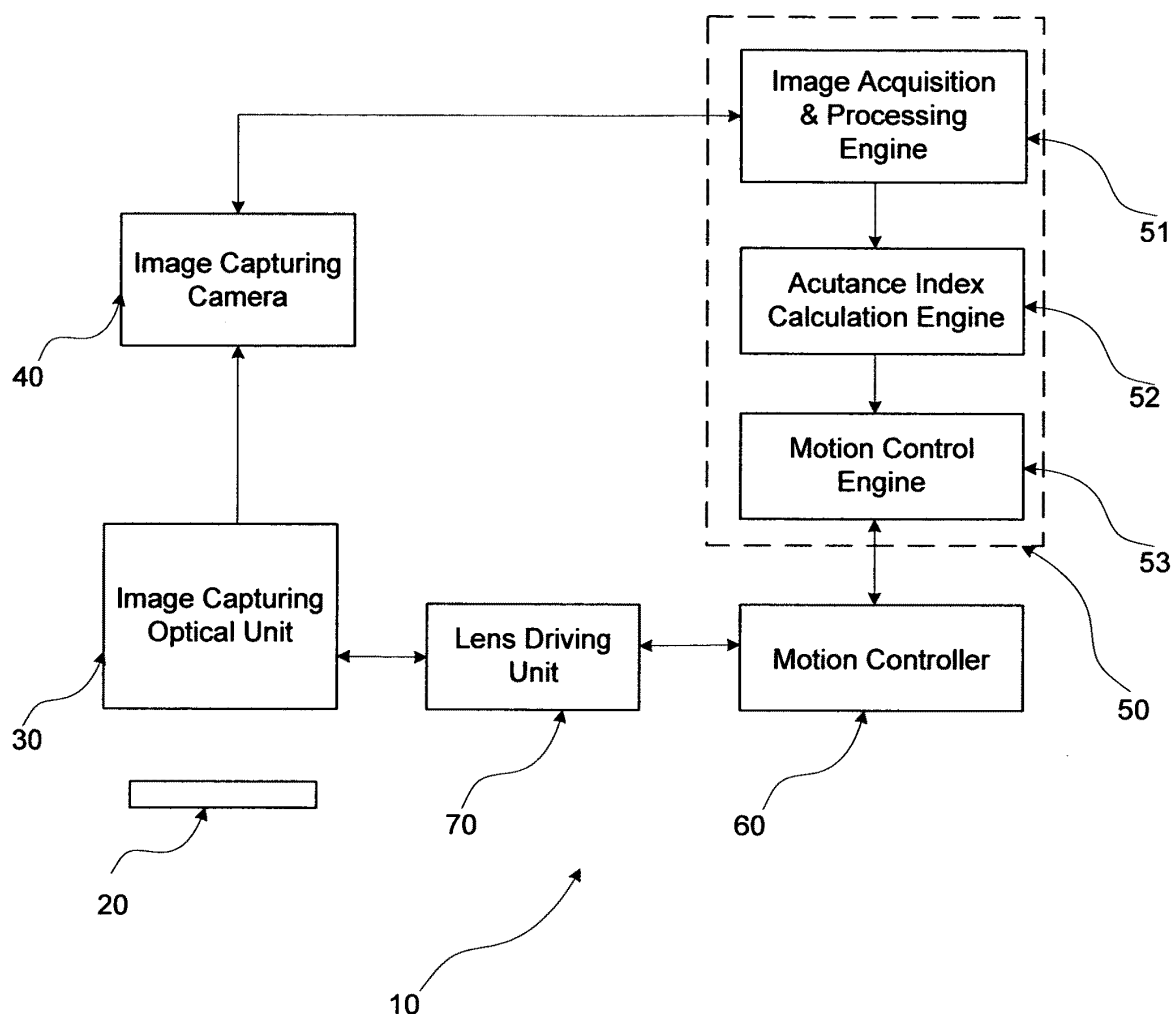
Family 14/18 - FAMPAT - ©Questel

Title

(US8373789)

Auto focus system and auto focus method

Images



Publication data including kind & date

US20110199532	A1	2011-08-18	US20110199532
US8373789	B2	2013-02-12	US8373789



Abstract

(US8373789)

An auto focus method for passive auto focus systems consists of an image acquisition and processing engine, as well as an acutance index calculation engine. An auto focus method measures image's acutance index rather than image's contrast value. A passive auto focus system employing the auto focus method of the present invention can accurately and reliably detect the best focus point and thus preventing auto focus malfunction even under the condition that illumination uniformity changes dramatically.

Inventors

JIN JU

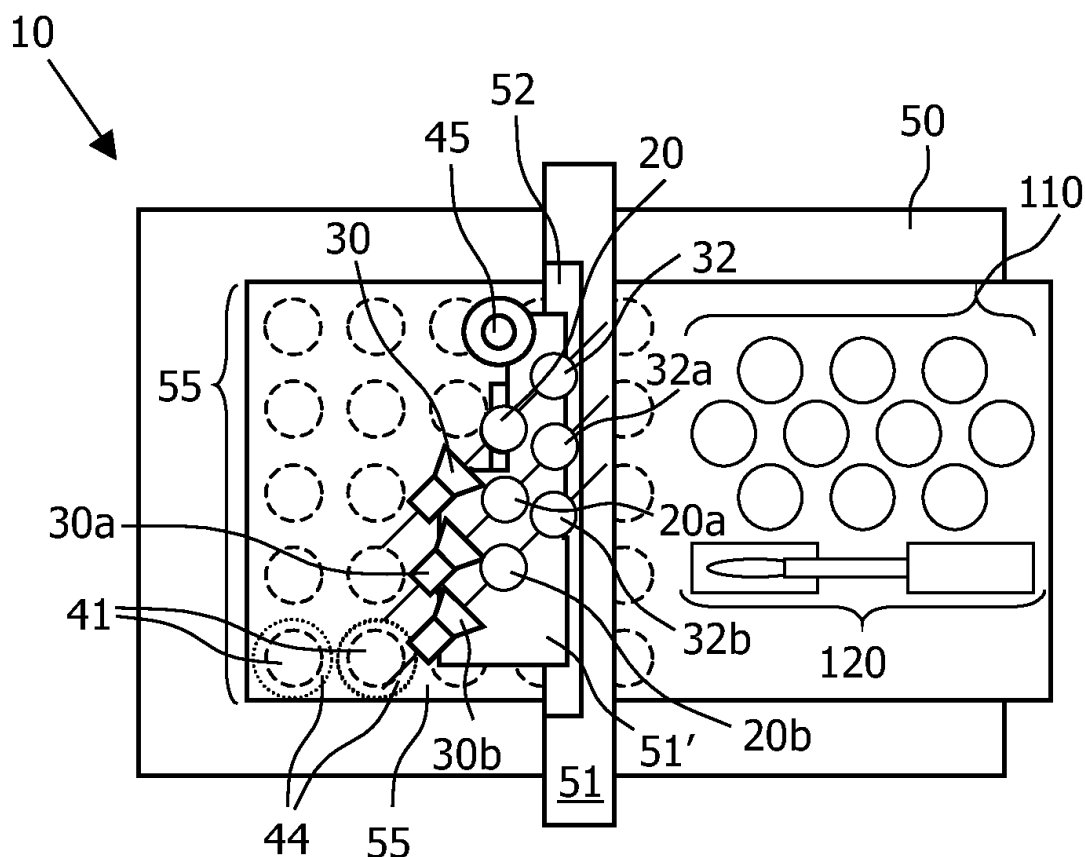
Family 15/18 - FAMPAT - ©Questel

Title

(EP1963002)

Ink jet device and method for producing a biological assay substrate by releasing a plurality of substances onto the substrate

Images



Publication data including kind & date

WO2007063459	A1	2007-06-07	WO200763459
EP1963002	A1	2008-09-03	EP1963002
CN101316652	A	2008-12-03	CN101316652
US20080305969	A1	2008-12-11	US20080305969
JP2009517684	A	2009-04-30	JP2009517684



Abstract

(EP1963002)

The invention provides an ink jet device (10) for producing a biological assay- substrate by releasing a plurality of substances onto the substrate, the device comprising printing means (20) , detection means (30,32,45,45') , filling means and cleaning means (120) , and wherein the ink jet device further comprises **control** means for an automated production such that the production of the biological assay substrate is error tolerant for a multitude of error sources.

Inventors

DIJKSMAN JOHAN F
 PIERIK ANKE
 WISMANS ANTONIUS J J
 VAN DEN BESSELAAR LEONARDUS J
 VERNHOUT MARTIN M
 RAAIJMAKERS ADRIANUS T A M
 SCHROEDERS RICHARD J M
 IMMINK ALBERT H J
 VERBEEK ROY G F A

Latest standardized assignees - inventors removed

PHILIPS ELECTRONICS

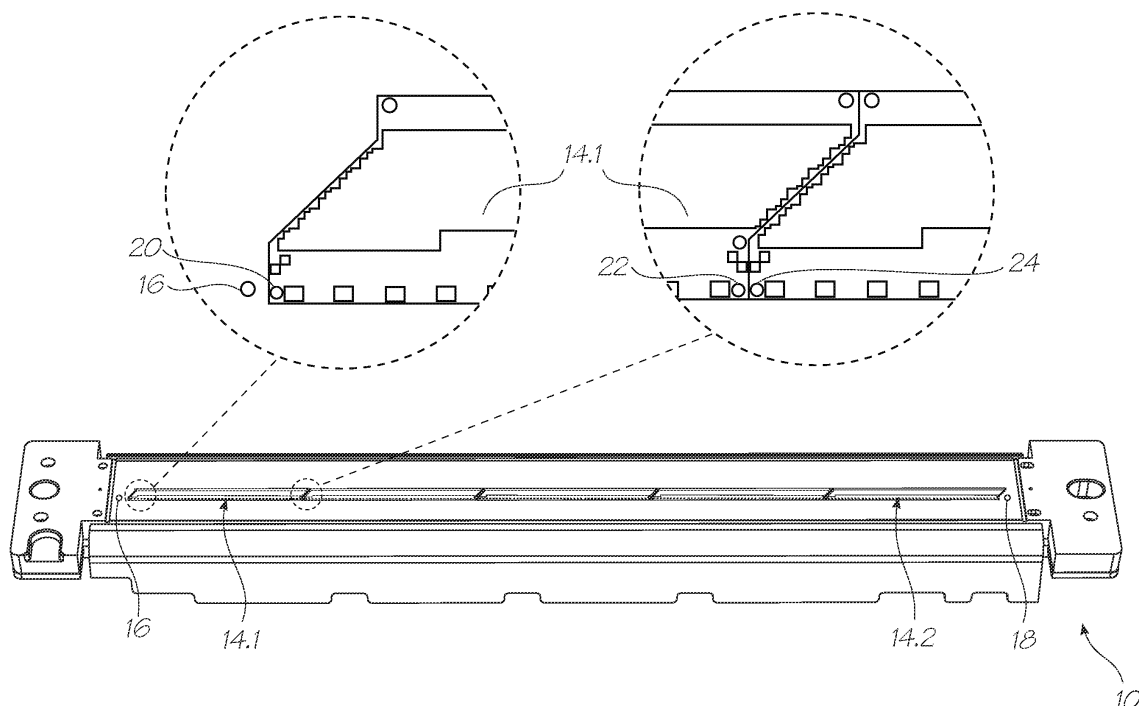
Family 16/18 - FAMPAT - ©Questel

Title

(US7924440)

Imaging apparatus for imaging integrated circuits on an integrated circuit carrier

Images



Publication data including kind & date

US20100045986	A1	2010-02-25	US20100045986
US7924440	B2	2011-04-12	US7924440
US20110149355	A1	2011-06-23	US20110149355



Abstract

(US7924440)

The invention provides for an imaging apparatus for imaging integrated circuits and a respective integrated circuit carrier. This enables positional analysis to be carried out on the integrated circuits and respective carrier. The imaging apparatus includes a support structure, and a bed mounted on the support structure and displaceable along an operative horizontal axis, the bed being configured to support a nest assembly that operatively retains the integrated circuit carrier and respective integrated circuits. Also included is a support assembly operatively mountable with respect to a bed on which the integrated circuit carrier and integrated circuits are supported, in use. The apparatus further includes an image recordal device mounted on the support assembly and configured to record an image representing the integrated circuit carrier and integrated circuits, the support assembly including an adjustment mechanism to enable adjustment of a **position** of the image recordal device relative to the bed.

Inventors

THARION JOSEPH
GRANGER WILLIAM
RANGER RALPH LEWIS
BOWYER GRAEME KENNETH
THELANDER JASON MARK

Latest standardized assignees - inventors removed

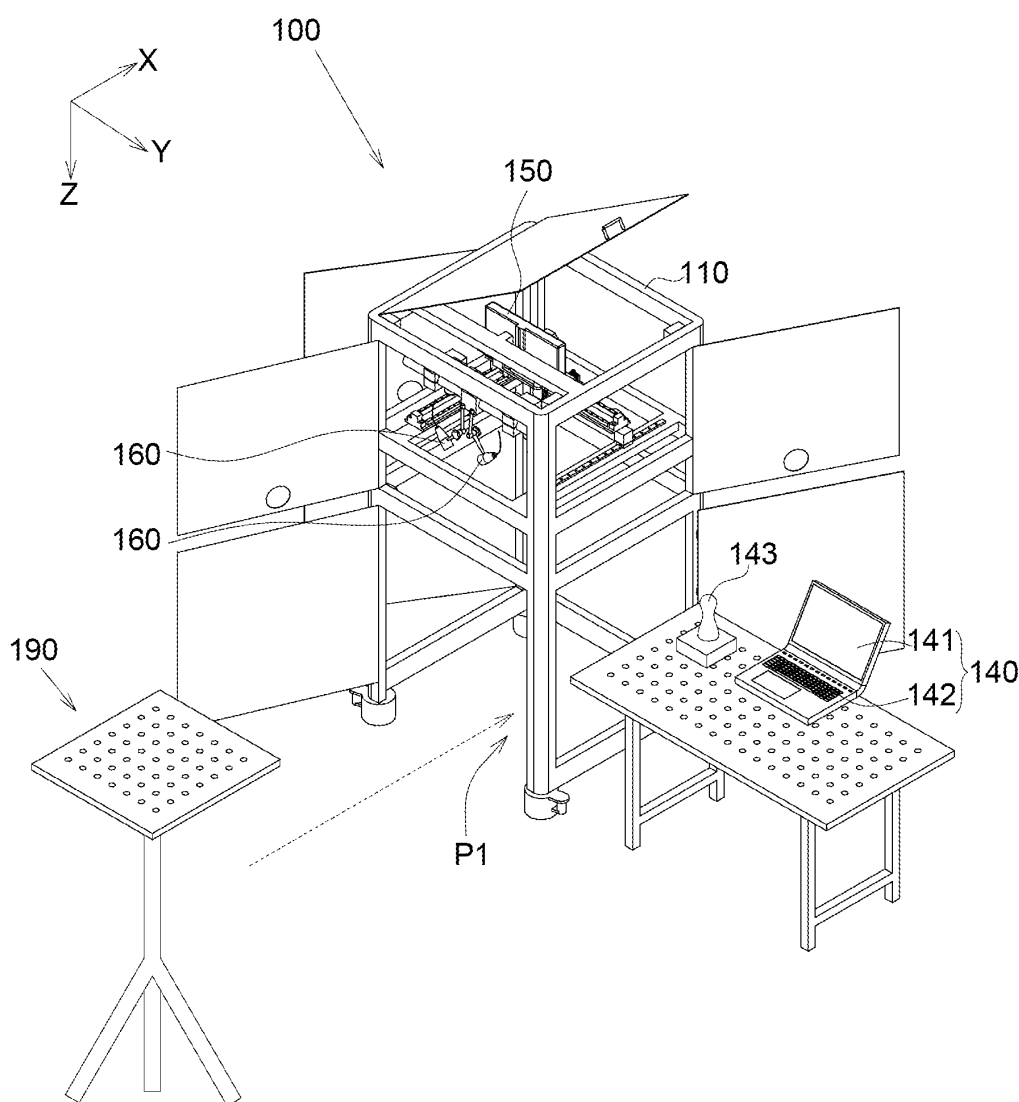
SILVERBROOK RESEARCH
MEMJET TECHNOLOGY

Family 17/18 - FAMPAT - ©Questel

Title

(US9891048)

Measurement equipment

Images**Publication data including kind & date**

US20150211852	A1	2015-07-30	US20150211852
US9891048	B2	2018-02-13	US9891048
US20180128612	A1	2018-05-10	US20180128612

**Abstract**

(US9891048)

The measurement equipment includes a rack, a first image capturing device, a second image capturing device, a third image capturing device and a fourth image capturing device. Wherein, the first image capturing device and the second image capturing device capture an entire image of a to-be-measured object, the third image capturing device and the fourth image capturing device capture a plurality of local images of a plurality of local areas of the to-be-measured object, and the entire image and the local images are simultaneously captured.

Inventors

PARK SEUNGBAE
HSU YU HO
KAO CHIN LI
HUANG TAI YUAN

Latest standardized assignees - inventors removed

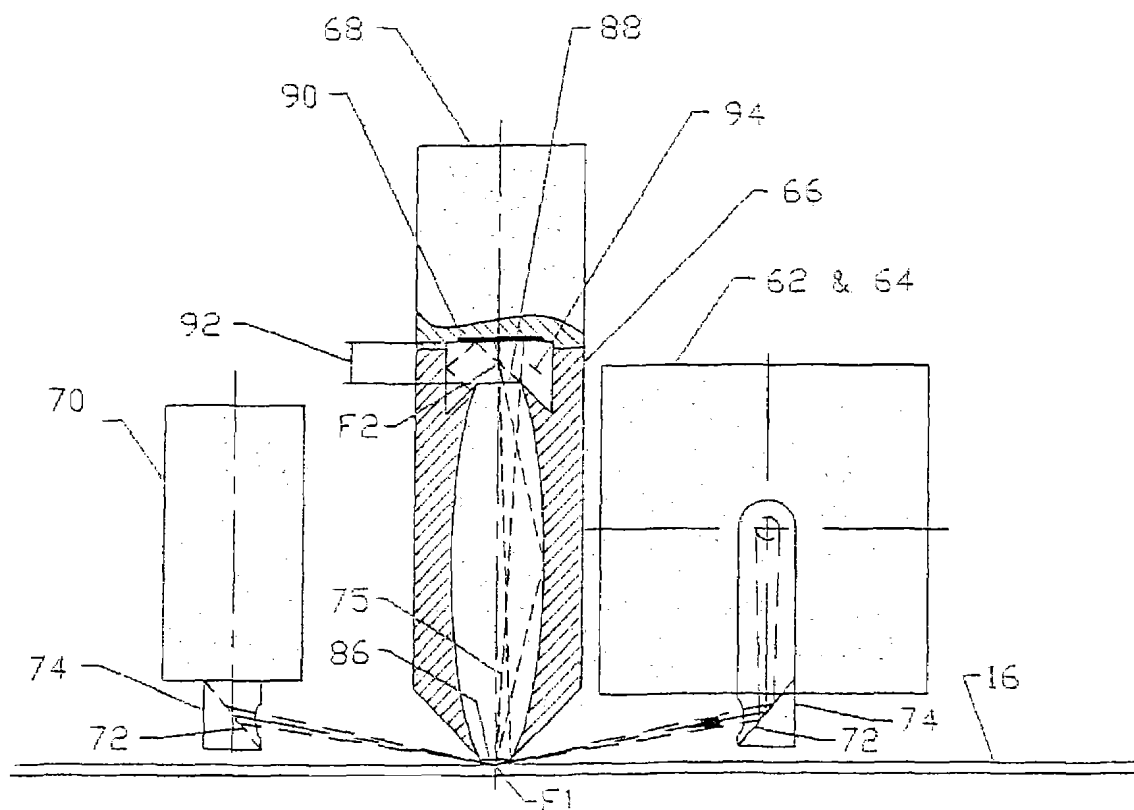
ADVANCED SEMICONDUCTOR ENGINEERING

Family 18/18 - FAMPAT - ©Questel

Title

(US7002675)

Method and apparatus for locating/sizing contaminants on a polished planar surface of a dielectric or semiconductor material

Images**Publication data including kind & date**

US20050007580	A1	2005-01-13	US20050007580
US7002675	B2	2006-02-21	US7002675

**Abstract**

(US7002675)

To locate/size contaminants at the surface of a dielectric or semiconductor material, a P-polarized beam of light from a monochromatic solid-state source is disposed specifically at Brewster's angle and focused to form an illuminated quasi-elliptical spot on the surface that produces effectively no reflected or scattered light from the surface. The spot is scanned over the entire surface so as to assure multiple passes of any contaminant through the spot. On each pass through the spot a contaminant will produce scattered light. A novel high numerical aperture reflective or refractive system is disposed above the surface to always view the spot and to collect/redirect the bulk of the contaminant scattered light to a detector. Illumination at Brewster's angle combined with the high numerical aperture scattered light collector/redirector maximizes the signal-to-noise ratio from the detector. These core components are packaged with support subsystems as a uniquely compact and portable apparatus.

Inventors

MACGIBBON BRUCE
ADAMSKI DONALD F
STEVENS TODD

Latest standardized assignees - inventors removed

SYNETICS SOLUTIONS

BIOSTORAGE TECHNOLOGIES

BROOKS AUTOMATION