PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NANOMECHANICS, INC.	09/28/2018

RECEIVING PARTY DATA

Name:	KLA-TENCOR CORPORATION
Street Address:	ONE TECHNOLOGY DRIVE
City:	MILPITAS
State/Country:	CALIFORNIA
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PROPERTY NUMBERS Total: 6

Property Type	Number
Patent Number:	8028343
Patent Number:	9712034
Application Number:	15076847
Application Number:	15089923
Application Number:	62619486
PCT Number:	US2017025711

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NAME OF SUBMITTER:	MARK P. CROCKETT
SIGNATURE:	/MarkPCrockett/
DATE SIGNED:	10/04/2018

Total Attachments: 8

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PATENT ASSIGNMENT

WHEREAS, Nanomechanics, Inc., a Tennessee corporation, having a place of business located at 1 Technology Drive, Milpitas, California 95035 (hereinafter "ASSIGNOR"), hereby represents and warrants that it is the sole and exclusive owner of the entire right, title, and interest in, to and under the Patent Items (as defined below).

WHEREAS, KLA-Tencor Corporation, a Delaware corporation (hereinafter "ASSIGNEE"), has acquired ASSIGNOR'S entire right, title and interest in, to and under (i) the patents and patent applications identified in the schedule attached hereto (hereinafter "SCHEDULE A"), and all provisional applications relating thereto; (ii) all patents issuing on any patent applications identified in SCHEDULE A; (iii) all reissues, reexaminations, extensions, divisionals, renewals, continuations, continuations-in-part and counterparts (whether foreign or domestic) claiming priority to or based on any of the foregoing items in (i) or (ii) above, along with all patents issuing therefrom; and (iv) all inventions and improvements claimed or described in any of the foregoing items (i), (ii) or (iii)(subsections (i), (ii), (iii) and (iv) hereinafter collectively referred to as the "Patent Items").

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, ASSIGNOR and ASSIGNEE agree as follows:

1. ASSIGNOR does acknowledge that ASSIGNOR has sold, assigned, transferred, conveyed, and delivered, and by these presents does hereby sell, assign, transfer, convey and deliver unto ASSIGNEE, its successors, legal representatives and assigns, ASSIGNOR'S entire right, title and interest throughout the world in, to and under the Patent Items, including without limitation all foreign patents and any rights of priority based on or related to the Patent Items.

2. ASSIGNOR hereby authorizes and requests the Commissioner of Patents of the United States of America, and any Official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications, to issue all patents for the Patent Items to ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this Patent Assignment.

3. ASSIGNOR does acknowledge that ASSIGNOR has sold, assigned, transferred, conveyed, and delivered, and by these presents does hereby sell, assign, transfer, convey and deliver to ASSIGNEE, its successors, legal representatives and assigns, ASSIGNOR'S entire rights of enforcement, all of ASSIGNOR'S claims for damages and remedies arising out of, relating to or resulting from the Patent Items or any violations) thereof, whether accrued prior to the date of this Patent Assignment or hereafter, including but not limited to the right to sue for, seek, collect, recover and retain damages and any other relief arising out of or resulting from any past, present or future infringement or violation of any of the Patent Items, and all other rights ,including common law rights, that ASSIGNOR may have relating to the Patent Items, including but not limited to any ongoing or prospective royalties to which ASSIGNOR may be entitled, or that ASSIGNOR may collect for any infringements of any of the Patent Items or from any settlement

or agreement related to the Patent Items arising before or after the date of this Patent Assignment, such rights to be held and enjoyed by ASSIGNEE, its successors, legal representatives and assigns, as fully and entirely as the same would have been held and enjoyed by ASSIGNOR if this Patent Assignment had not been made.

4. ASSIGNOR hereby represents and warrants that ASSIGNOR has full right, power and authority to self, assign, transfer, convey and deliver all of the subject matter set forth herein, and hereby covenants and agrees that ASSIGNOR will communicate promptly to ASSIGNEE, its successors, legal representatives and assigns, all facts know to ASSIGNOR respecting the Patent Items, and will testify in any legal proceeding, sign all lawful papers, transfer all file histories, make diligent effort to find or reach every inventor of the Patent Items required in connection with preparation of any lawful document or proceeding relating to the Patent Items, make reasonable efforts to obtain all required signed and executed documents relating to the Patent Items from every inventor named in the Patent Items, make all rightful declarations and/or oaths and generally do everything possible to aid ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce patent protection to the Patent Items on a worldwide basis in all countries.

IN WITNESS WHEREOF, I hereunto set my hand this ___day of _____, 2018.

Nanomechanics, Inc.

By: _____

Name: Jeffrey Cannon

Title: Secretary

KLA-Tencor Corporation

By: _____

Name: _____

Title: _____

Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
65886.US	Scanning Probe Microscope With Independent Force Control And Displacement Measurements (US)	12/362,359 January 29, 2009	8,028,343 Sept. 27, 2011	A nanoindenter that includes an interferometer, a rod, a force actuator and a controller is disclosed. The interferometer generates a light beam that is reflected from a moveable reflector, the interferometer determining a distance between a reference location and the moveable reflector. The rod is characterized by a rod axis and includes a tip on a first end thereof. the rod includes the moveable reflector at a location proximate to the tip. The tip is disposed in a manner that allows the tip to be forced against the surface of a sample. The force actuator applies a force to the rod in a direction parallel to the rod axis in response to a force control signal coupled to the actuator. The controller receives the determined distance from the interferometer and generates the force control signal. The invention can also be used as a scanning probe microscope.	7.5-year maintenance fee due March 27, 2019. Estimated expiration date: 7-3-2029
67808.AT	Electromagnetic Actuator to Reduce Heating Effects (Austria)	13715491.0	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033
67808.CH	Electromagnetic Actuator to Reduce Heating Effects (Switzerland)	13715491.0	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033

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Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
67808.DE	Electromagnetic Actuator to Reduce Heating Effects (Germany)	3020130225257	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033
67808.EP	Electromagnetic Actuator to Reduce Heating Effects (Europe)	13715491.0	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033
67808.FR	Electromagnetic Actuator to Reduce Heating Effects (France)	13715491.0	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033

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Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
67808.GB	Electromagnetic Actuator to Reduce Heating Effects (Great Britain)	13715491.0	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033
67808.IN	Electromagnetic Actuator to Reduce Heating Effects (India)	7960DELNP2014 September 24, 2014	TBD	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Application pending. Request for Examination filed January 18, 2016. Awaiting first action.
67808.IT	Electromagnetic Actuator to Reduce Heating Effects (Italy)	01151108280298	2826047 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	Renewal due March 31, 2019. Estimated expiration date: 3-15-2033

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Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
67808.US	Electromagnetic Actuator to Reduce Heating Effects (US)	14/384,801 September 12, 2014	9,712,034 June 21, 2017	The application describes an electromechanical actuator for generating a mechanical force to be transferred to an apparatus. The electromechanical actuator comprises an electromagnetic coil, a connecting member, and a magnet. The connecting member is mechanically coupled between the electromagnetic coil and the apparatus and is configured to transfer the mechanical force from the electromagnetic coil to the apparatus. The magnet is disposed between the electromagnetic coil and the apparatus and includes a channel in which the electromagnetic coil is disposed, the channel having a channel opening that faces away from the apparatus, the magnet further having a central hole through which the connecting member extends.	3.5-year maintenance fee due January 18, 2021. Estimated expiration date: 12-17-2033
71164.CN	Structure for Achieving Dimensional Stability During Temperature Changes (China)	2016800240731 October 25, 2017	TBD	A heated or cooled sample holding stage for use in a nanoindentation measurement system is described. The geometry of the design and the selection of materials minimizes movement of a sample holder with respect to a nanoindentation tip over a wide range of temperatures. The system controls and minimizes motion of the sample holder due to the heating or cooling of the tip holder and/or the sample holder in a high temperature nanoindentation system. This is achieved by a combination of geometry, material selection and multiple sources and sinks of heat. The system is designed to control both the steady state and the transient displacement response.	Application pending. Voluntary amendments due July 19, 2018. Request to record in Hong Kong due September 23, 2018.
71164.EP	Structure for Achieving Dimensional Stability During Temperature Changes (Europe)	16769545.1 October 16, 2017	TBD	A heated or cooled sample holding stage for use in a nanoindentation measurement system is described. The geometry of the design and the selection of materials minimizes movement of a sample holder with respect to a nanoindentation tip over a wide range of temperatures. The system controls and minimizes motion of the sample holder due to the heating or cooling of the tip holder and/or the sample holder in a high temperature nanoindentation system. This is achieved by a combination of geometry, material selection and multiple sources and sinks of heat. The system is designed to control both the steady state and the transient displacement response.	Application pending. Request to record in Hong Kong due July 31, 2018. Renewal due March 31, 2019.

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Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
71164.IN	Structure for Achieving Dimensional Stability During Temperature Changes (India)	201727037256 October 22, 2017	TBD	A heated or cooled sample holding stage for use in a nanoindentation measurement system is described. The geometry of the design and the selection of materials minimizes movement of a sample holder with respect to a nanoindentation tip over a wide range of temperatures. The system controls and minimizes motion of the sample holder due to the heating or cooling of the tip holder and/or the sample holder in a high temperature nanoindentation system. This is achieved by a combination of geometry, material selection and multiple sources and sinks of heat. The system is designed to control both the steady state and the transient displacement response.	Application pending. Awaiting further word from associate.
71164.US	Structure for Achieving Dimensional Stability During Temperature Changes (US)	15/076,847 March 22, 2016	TBD	A heated or cooled sample holding stage for use in a nanoindentation measurement system is described. The geometry of the design and the selection of materials minimizes movement of a sample holder with respect to a nanoindentation tip over a wide range of temperatures. The system controls and minimizes motion of the sample holder due to the heating or cooling of the tip holder and/or the sample holder in a high temperature nanoindentation system. This is achieved by a combination of geometry, material selection and multiple sources and sinks of heat. The system is designed to control both the steady state and the transient displacement response.	Application pending. Response to first Office Action due July 3, 2018.
71218.US	Compensated Mechanical Testing System (US)	15/089,923 April 4, 2016	TBD	A hardness tester having a frame, and a stage for holding a sample. A probe having a tip contacts a surface of the sample. A primary actuator is connected to the frame and applies a primary force and drives the tip into the sample, thereby causing the frame to flex. A displacement sensor measures a displacement value comprised of two components, the first component including a distance traveled by the probe as the primary force is applied, and the second component including a measure of a degree of flex of the frame as the primary force is applied. A compensating actuator is connected to the frame and applies a compensating force that reduces the second component of the displacement value.	Application pending. Response to first Office Action filed April 10, 2018. Awaiting allowance.

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Schedule A

LNG File No.	Title of Invention	Serial No./ Filing Date	Patent No./ Issue Date	Abstract	Status
71218.W1	Compensated Mechanical Testing System (International)	PCT/US17/25711 April 3, 2017	N/A	A hardness tester having a frame, and a stage for holding a sample. A probe having a tip contacts a surface of the sample. A primary actuator is connected to the frame and applies a primary force and drives the tip into the sample, thereby causing the frame to flex. A displacement sensor measures a displacement value comprised of two components, the first component including a distance traveled by the probe as the primary force is applied, and the second component including a measure of a degree of flex of the frame as the primary force is applied. A compensating actuator is connected to the frame and applies a compensating force that reduces the second component of the displacement value.	National phase applications due October 4, 2018.
73214.PV	Apparatus and Method for Two-Dimensional Nanoindentation (U.S. provisional)	62/619,486 January 19, 2018	N/A	A system for measuring mechanical properties of materials by application of normal and lateral forces to a material sample.	Non-provisional U.S. and foreign applications due January 19, 2019.