PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Imago Scientific Instruments Corporation	03/31/2010

RECEIVING PARTY DATA

Name:	CAMECA Instruments, Inc.
Street Address:	91 McKee Drive
City:	Mahwah
State/Country:	NEW JERSEY
Postal Code:	07430

PROPERTY NUMBERS Total: 26

Property Type	Number
Application Number:	11917685
Application Number:	11917672
Application Number:	11997141
Application Number:	11997145
Application Number:	61225992
Application Number:	12064020
Application Number:	12092066
Application Number:	12294716
Application Number:	12296700
Application Number:	61263019
Application Number:	12676314
Application Number:	12425291
Application Number:	11917663
Application Number:	61168175
Application Number:	61220275

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Application Number:	61316184
Patent Number:	6576900
Patent Number:	6700121
Patent Number:	6762415
Patent Number:	7019307
Patent Number:	7157702
Application Number:	10592661
Patent Number:	7652269
Application Number:	12692394
Application Number:	11720709
Application Number:	11629414

CORRESPONDENCE DATA

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NAME OF SUBMITTER:	Christopher R. Lewis

Total Attachments: 23
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ASSIGNMENT OF PATENTS

THIS ASSIGNMENT is made this 31st day of March 2010 by Imago Scientific Instruments Corporation, a Delaware Corporation ("Assignor") in favor of CAMECA Instruments, Inc., a New York corporation ("Assignee").

THIS ASSIGNMENT is made with reference to the following facts:

A. Assignor as "Seller" and Assignee as "Buyer" have entered into an Asset Purchase Agreement (the "Purchase Agreement") dated as of April 1, 2010, the terms of which are incorporated herein by this reference, pursuant to which Assignor has agreed to transfer to Assignee certain assets which include patents, patent applications and patent disclosures and inventions (collectively, the "Patents") as described in the Purchase Agreement and which are more specifically described on Exhibit A attached hereto.

B. For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Assignor, Assignor desires to execute and deliver this Assignment of Patents for the purpose of effecting such transfer and sale pursuant to the terms and conditions of the Purchase Agreement.

NOW, THEREFORE, for good and valuable consideration received by Assignor from Assignee:

Assignor hereby assigns to Assignee all the right, title, interest, claim and demand of every nature, legal or equitable, of the Assignor in the Patents of any kind, whether issued by the United States or any other country, and any interest in such Patents including all divisions and continuations of the Patents, all reissues and reexaminations thereof, all rights to claim priority based thereon, and all letters patents thereof, and including the right to sue for past infringement, and any licenses or contracts in respect to the Patents, in all inventions of any kind related to such Patents, and any interest in them, and any licenses or contracts in respect to the Patents, as to those such which are now owned or possessed by the Assignor, or to which patents, inventions, or licenses or contracts in respect to them it is beneficially entitled, whether in possession, reversion, remainder or expectancy.

Assignor authorizes and requests the Commissioner of Patents of the United States to issue to the Assignee the entire interest of the Assignor in the Patents for any inventions to which the Assignee is entitled by virtue of this document for the sole use of Assignee, its successors and assigns to the full end of the term of the Patents.

Those Patents and inventions and the rights in them are to be held and enjoyed by the Assignee for its own use and for the use of its successors and assigns to the full end of the terms for which Patents are or may be granted as fully as they would have been held and enjoyed by the Assignor had this assignment and sale not been made.

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In the event that there is any defect in Assignor's chain of title with respect to the Patents, Assignor agrees to obtain such additional instruments of transfer as may be necessary to reflect Assignor's ownership and right to transfer the Patents to Assignee. Assignor shall be legally bound, upon request and at the expense of the Assignee or its successors or assigns or a legal representative thereof, to supply all information and evidence of which the undersigned has knowledge or possession, relating to the making and practice of any invention described in the Patents, to testify in any legal proceeding relating thereto, to execute all instruments and do such other acts as may be necessary and proper to patent any invention described in the Patents in all countries, in the name of Assignee and to execute all instruments proper to carry out the intent of this instrument.

Assignor hereby warrants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

EXECUTED effective as of March 31, 2010.

Imago Scientific Instruments Corporation, a Delaware corporation

By ____________

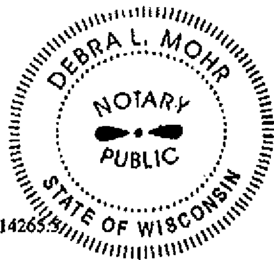
Name: Emmanuel Lakios

Its: Chief Operating Officer

STATE OF WISCONSIN)
)
COUNTY OF MADISON)

On 3/31, 2010, before me, Debra L. Mohr, a notary public, personally appeared Emmanuel Lakios, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify that under PENALTY OF PERJURY under the laws of the State of Wisconsin that the foregoing is true and correct.



WITNESS my hand and official seal.

Debra L. Mohr
Notary Public in and for said County and State

My commission expires on October 14, 2012

EXHIBIT A

PATENTS

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
1.	ATOM PROBE ELECTRODE TREATMENTS	392458002US	Ulfig, Robert M. Bunton, Joseph H. Kelly, Thomas Larson, Dave Martens, Richard L. Thompson, Keith Weiner, Scott	U.S. Application No. 60/690,997 Filed: 16-Jun-2005	Status: Expired provisional
2.	ATOM PROBE ELECTRODE TREATMENTS	392458002US1	Ulfig, Robert M. Bunton, Joseph H. Kelly, Thomas Larson, Dave Martens, Richard L. Thompson, Keith Weiner, Scott	U.S. Application No. 11/917,685 Filed: 21-Jul-2008	(Abstract) A method for treating an atom probe electrode (120), which comprises the steps of providing an atom electrode (120) having a surface (123) and an aperture (122); and removing material (604) from the surface (123) to reduce a potential of the atom probe electrode creating a non-uniformity in an electric field (502) when the atom probe electrode is used in a atom probe device during specimen analysis. Status: Published
3.	ATOM PROBE ELECTRODE TREATMENTS	392458002WO	Ulfig, Robert M. Bunton, Joseph H. Kelly, Thomas Larson, Dave Martens, Richard L. Thompson, Keith Weiner, Scott	PCT Publication No. WO2007/001321 Serial No. PCT/US05/25740 Filed 21-Jul-2005	Priority to: U.S. Application No. 60/690,997, filed 6/16/2005 Status: Converted

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
4.	ATOM PROBE COMPONENT TREATMENTS	392458003US	Kelly, Thomas Larson, Dave Martens, Richard L. Ulfig, Robert M. Wiener, Scott A.	**U.S. Application No.** 60/691,004 Filed: 16-Jun-2005	Status: Expired provisional
5.	ATOM PROBE COMPONENT TREATMENTS	392458003US1	Kelly, Thomas Larson, Dave Martens, Richard L. Thompson, Keith Ulfig, Robert M. Wiener, Scott A.	**U.S. Application** No. 11/917,672 Filed: 12-Aug-2008	(Abstract) The present invention relates to treatments for atom probe components. For example, certain aspects are directed toward processes for treating an atom probe component that includes removing material from a surface of the atom probe component (e.g., using an ion beam, a plasma, a chemical etching process, and/or photonic energy). Another aspect of the invention is directed toward a method for treating an atom probe specimen that includes using a computing device to automatically control a voltage used in an ion sputtering process. Still other aspects of the invention are directed toward methods for treating an atom probe component that includes introducing photonic energy proximate to a surface of the atom probe component, annealing at least a portion of a surface of the atom probe component, coating at least a portion of a surface of the atom probe component, and/or cooling at least a portion of the atom probe component. Status: Published
6.	ATOM PROBE COMPONENT TREATMENTS	392458003WO	Kelly, Thomas Larson, Dave Martens, Richard L. Thompson, Keith Ulfig, Robert M. Wiener, Scott A.	**PCT Publication No.** WO2006/138593 Serial No. PCT/US06/23532 Filed 16-Jun-2006	Priority to: U.S. Application No. 60/691,004, filed 6/16/2005 Status: Converted

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
7.	SPECIMENS FOR MICROANALYSIS PROCESSES	392458004US1	Goodman, Steven L. Kelly, Thomas F. Tomicki, Terri J.	U.S. Application No. 11/997,141 Filed: 28-Jan-2008	(Abstract) The present invention relates to specimens for use in microanalysis processes. One aspect of the invention is directed toward using a mold to form specimens for a microanalysis process (e.g., including an atom probe and/or transmission electron microscope processes). Other aspects of the invention are directed towards embedding specimen material (e.g., including nanoparticles) in an embedment material to produce a specimen suitable for use in a microanalysis process. Still other aspects include combining specimen material with an embedment material to enhance a microanalysis process. Yet other embodiments of the invention are directed toward combining a specimen material with multiple embedment materials to produce specimens suitable for a microanalysis process. Further aspects of the invention are directed toward analyzing at least a portion of a specimen produced by one or more of the processes discussed above. Status: Pending
8.	ATOM PROBE EVAPORATION PROCESSES	392458006EP	Olson, Jesse D. Lenz, Daniel R. Payne, Timothy R.	EP Publication No. 1913362 Serial No. 06788736.4 Filed: 28-Jul-2006	Priority to: U.S. Application No. 60/703,412, filed 7/28/2005 Status: Published

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REEL: 024278 FRAME: 0309

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
9.	ATOM PROBE EVAPORATION PROCESSES	392458006US1	Olson, Jesse D. Lenz, Daniel R. Payne, Timothy R.	U.S. Application No. 11/997,145 Filed: 30-May-2008	(Abstract) The present invention relates to atom probe evaporation processes. For example, certain aspects are directed toward methods for controlling an evaporation process in an atom probe that includes initiating the atom probe evaporation process and monitoring a parameter associated with material being evaporated from a specimen. The method can further include controlling at least one characteristic of the atom probe evaporation process to attain a desired evaporation rate or characteristic. In selected embodiments, monitoring a parameter associated with material being evaporated can include monitoring an evaporation rate, mass-to-charge ratios of evaporated ions, a mass resolution, a composition of material being evaporated, and/or the like. In certain embodiments, controlling at least one characteristic can include controlling a pulse energy, a pulse frequency, a bias energy, and/or the like. In other embodiments, various portions of the above process can be computer implemented. Status: Published
10.	PARTICLE DETECTORS	392458007US4	Kelly, Thomas F.	U.S. Application No. 61/225,992 Filed: 16-Jul-2009	Status: Pending
11.	ATOM PROBES, ATOM PROBE SPECIMENS, AND ASSOCIATED METHODS	392458008CN	Kelly, Thomas F. Bunton, Joseph H. Wiener, Scott A.	CN Publication No. 101287983A Serial No. 200680038099.8 Filed: 15-Aug-2006	Priority to: U.S. Application No. 60/709,058, Filed 8/16/2005 Status: Published

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
12.	ATOM PROBES, ATOM PROBE SPECIMENS, AND ASSOCIATED METHODS	392458008EP	Kelly, Thomas F. Bunton, Joseph H. Wiener, Scott A.	**EP Publication No.** 1924846 Serial No. 06813485.7 Filed: 15-Aug-2006	Priority to: U.S. Application No. 60/709,058, Filed 8/16/2005 Status: Published
13.	ATOM PROBES, ATOM PROBE SPECIMENS, AND ASSOCIATED METHODS	392458008US1	Kelly, Thomas F. Bunton, Joseph H. Wiener, Scott A.	**U.S. Application No.** 12/064,020 Filed: 01-Aug-2008	(Abstract) The present invention relates generally to atom probes, atom probe specimens, and associated methods. For example, certain aspects are directed toward methods for analyzing a portion of a specimen that includes selecting a region of interest and moving a portion of material in a border region proximate to the region of interest so that at least a portion of the region of interest protrudes relative to at least a portion of the border region. The method further includes analyzing a portion of the region of interest. Other aspects of the invention are directed toward a method for applying photonic energy in an atom probe process by passing photonic energy through a lens system separated from a photonic device and spaced apart from the photonic device. Yet other aspects of the invention are directed toward a method for reflecting photonic energy off an outer surface of an electrode onto a specimen. Status: Published
14.	ATOM PROBE PULSE ENERGY	392458009US	Bunton, Joseph H.	**U.S. Application No.** 60/731,727 Filed: 31-Oct-2005	Expired Provisional

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REEL: 024278 FRAME: 0311

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
15.	ATOM PROBE PULSE ENERGY	392458009US1	Bunton, Joseph H.	U.S. Application No. 12/092,066 Filed: 29-Apr-2008	(Abstract) The present invention relates to atom probe pulse energy. One aspect of the invention is directed toward a method that includes establishing a data relationship between pulse energy and bias energy for a target evaporation rate. In selected embodiments, establishing a data relationship can include determining an equivalent pulse fraction for a selected pulse energy and bias energy combination based on a local change in bias energy compared to a local change in pulse energy associated with the selected pulse energy and bias energy combination. Another aspect of the invention is directed toward a method that includes determining an equivalent pulse fraction for a first bias energy and pulse energy combination and/or a second bias energy and pulse energy combination based on the difference between the first bias energy and the second bias energy compared to the difference between the first pulse energy and the second pulse energy. Status: Pending
16.	ATOM PROBE PULSE ENERGY	392458009WO	Bunton, Joseph H.	PCT Publication No. WO2007/053721 Serial No. PCT/ US06/42742 Filed 31-Oct-2006	Priority to: U.S. Application No. 60/731,727, filed 10/31/2005 Status: Converted
17.	ATOM PROBE CALIBRATION AND RELATED STRUCTURES AND METHODS	392458010US	Ulfig, Robert M. Kelly, Thomas F. Wiener, Scott A. Gerstl, Stephan Larson, David J.	U.S. Application No. 60/753,929 Filed: 23-Dec-2005	Expired Provisional

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REEL: 024278 FRAME: 0312

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
18.	ATOM PROBE TEST STANDARDS AND RELATED STRUCTURES AND METHODS	**392458010WO**	Ulfig, Robert M. Kelly, Thomas F. Wiener, Scott A. Gerstl, Stephan Larson, David J.	**PCT Publication No.** WO2007/075908 Serial No. PCT/ US06/48823 Filed 21-Dec-2006	Priority to: U.S. Application No. 60/753,929, filed 12/23/2005 Status: Abandoned
19.	ATOM PROBE DATA AND ASSOCIATED SYSTEMS AND METHODS	**392458014US1**	Wiener, Scott A. Kelly, Thomas F. Larson, David J. Thompson, Keith J. Ulfig, Robert M. Geiser, Brian P. Kunicki, Thomas C. O'Neill, Raymond W. Schneir, Jason	**U.S. Application No.** 12/294,716 Filed: 26-Sep-2008	(Abstract) The present invention relates to atom probe data and associated systems and methods. Aspects of the invention are directed toward a computing system configured to predict a characteristic associated with an atom probe specimen that includes a data set receiving component configured to receive a three-dimensional data set associated with a portion of the specimen. The system further includes a predicting/calculating component configured to predict the characteristic associated with the specimen based on the data set. Other aspects of the invention are directed toward a method for evaluating a manufacturing process using atom probe data that includes receiving a three-dimensional data set associated with a portion of a microelectronic assembly produced by a manufacturing process. The method further includes determining a variation between the data set and a configuration expected to result from the manufacturing process. Status: Pending

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
20.	ATOM PROBE DATA PROCESSES AND ASSOCIATED SYSTEMS	392458018US1	Geiser, Brian Peter Kelly, Thomas F. Schneir, Jason Roberts, Jay P. Larson, David J. Wiener, Scott A.	U.S. Application No. 12/296,700 Filed: 13-Mar-2009	(Abstract) The present invention relates to atom probe data processes and associated systems. Aspects of the invention are directed toward a computing system configured to process atom probe data that includes a data set receiving component configured to receive a first three-dimensional data set. The first three-dimensional data set has a first data element structure and is based on data collected from performing an atom probe process on a portion of an atom probe specimen. The system further includes a data set constructing component configured to create a second three-dimensional data set having a second data element structure different than the first data element structure. In selected embodiments, the system can further include a Fourier Transform component configured to perform a Fourier Transform on a portion of the second three-dimensional data set. Status: Pending
21.	ATOM PROBES USING PHOTONIC ENERGY AND ASSOCIATED METHODS	392458020US3	Wiener, Scott A. Prosa, Ty Larson, David J. Bunton, Joseph H. Kelly, Thomas F.	U.S. Application No. 61/263,019 Filed: 20-Nov-2009	Status: Pending
22.	PULSED LASER ATOM PROBE AND ASSOCIATED METHODS	392458022US	Bunton, Joseph H.	U.S. Application No. 60/893,802 Filed: 08-Mar-2007	Expired Provisional

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REEL: 024278 FRAME: 0314

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
23.	PULSED LASER ATOM PROBE AND ASSOCIATED METHODS	**392458022WO**	Bunton, Joseph H.	**PCT Publication No.** WO2008/109875 Serial No. PCT/ US08/56326 Filed 07-Mar-2008	Priority to: U.S. Application No. 60/893,802, filed 3/8/2007 Status: Abandoned
24.	METHODS AND APPARATUSES TO ALIGN ENERGY BEAM TO ATOM PROBE SPECIMEN	**392458023US1**	Alvis, Roger Oltman, Ed	**U.S. Application No.** 12/676,314 Filed: 03-Mar-2010	Priority to: PCT Application No. US08/74501 Status: Pending
25.	METHODS AND APPARATUSES TO ALIGN ENERGY BEAM TO ATOM PROBE SPECIMEN	**392458023WO**	Bunton, Joseph H. Olson, Jesse D. Alvis, Roger Lenz, Daniel R. Oltman, Ed	**PCT Publication No.** WO2009/032706 Serial No. PCT/US08/74501 Filed: 27-Aug-2008	Priority to: U.S. Application No. 60/969,892, filed 9/4/2007 Status: Published
26.	REFLECTRON	**392458024US1**	Panayi, Peter	**U.S. Application No.** 12/425,291 Filed: 16-Apr-2009	(Abstract) A reflectron (1) for deflecting an ion from a specimen in a time-of-flight mass spectrometer comprises a front electrode (2) and a back electrode (3). At least one of the front and back electrodes (2, 3) is capable of generating a curved electric field. The front and back electrodes are configured to perform time focusing and resolve an image of a specimen. Status: Published

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
27.	ATOM PROBE	392458026US	Panayi, Peter	U.S. Application No. 11/917,663 Filed: 14-Dec-2007	(Abstract) Aspects of the present invention are directed generally toward atom probe and three-dimensional atom probe microscopes. For example, certain aspects of the invention are directed – toward an atom probe or a three-dimensional atom probe that includes a sub-nanosecond laser to evaporate ions from a specimen under analysis and a reflectron for reflecting the ions. In further aspects of the invention, the reflectron can include a front electrode and a back electrode. At least one of the front and back electrodes can be capable of generating a curved electric field. Additionally, the front electrode and back electrodes can be configured to perform time focusing and resolve an image of a specimen. Status: Pending
28.	METHODS AND APPARATUSES TO ALIGN ENERGY BEAM TO ATOM PROBE SPECIMEN	392458027WO	Kelly, Thomas F.	PCT Publication No. WO2009/155440 Serial No. PCT/US09/47827 Filed: 18-Jun-2009	Priority to: U.S. Application No. 61/074,553, filed 6/20/2008 Status: Published
29.	METHODS AND DEVICES TO IMPROVE ATOM PROBE PERFORMANCE	392458028US	Gribb, Tye Travis	U.S. Application No. 61/168,175 Filed: 09-Apr-2009	Status: Pending
30.	USE OF A LARGE ANGLE REFLECTRON FOR MASS SPECTROSCOPY IMAGING AND ASSOCIATED METHODS	392458029US	Gribb, Tye Travis	U.S. Application No. 61/220,275 Filed: 25-Jun-2009	Status: Pending

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REEL: 024278 FRAME: 0316

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
31.	METHODS AND DEVICES TO IMPROVE PARTICLE DETECTOR PERFORMANCE	392458030US	Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A.	U.S. Application No. 61/316,184 Filed: 22-Mar-2010	Status: Pending
32.	METHODS OF SAMPLING SPECIMENS FOR MICROANALYSIS	392458101US1	Kelly, Thomas F. Martens, Richard L. Goodman, Steven L.	U.S. Patent No. 6,576,900 Issued: 10-Jun-2003	(Abstract) Methods of sampling specimens for microanalysis, particularly microanalysis by atom probe microscopy, include steps of forming a study specimen in a first study object (as by use of focused ion beam milling); removing the study specimen from the study object; situating the study specimen on a second study object; and microanalyzing the study specimen. Where the first study object is of particular interest for study, the study specimen may be taken from a functional portion of the first study object so that microanalysis will provide information regarding this functional portion. Where the second study object is of particular interest for study, the second study object may be subjected to manufacturing processes (e.g., deposition of layers of materials) after the study specimen is situated thereon so that the study specimen will provide information regarding the results of the manufacturing process. The study specimen may have study regions formed thereon which are particularly suitable for study by atom probes, e.g., regions bearing raised protrusions, at virtually any point during the process, thereby greatly enhancing the speed and efficiency of specimen preparation. Status: Granted; 8th year maintenance fee due 12/10/2010

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REEL: 024278 FRAME: 0317

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
33.	METHODS OF SAMPLING SPECIMENS FOR MICROANALYSIS	**392458101US2**	Kelly, Thomas F. Martens, Richard L. Goodman, Steven L.	**U.S. Patent No.** 6,700,121 Issued : 02-Mar-2004	(Abstract) Methods of sampling specimens for microanalysis, particularly microanalysis by atom probe microscopy, include steps of forming a study specimen in a first study object (as by use of focused ion beam milling); removing the study specimen from the study object; situating the study specimen on a second study object; and microanalyzing the study specimen. Where the first study object is of particular interest for study, the study specimen may be taken from a functional portion of the first study object so that microanalysis will provide information regarding this functional portion. Where the second study object is of particular interest for study, the second study object may be subjected to manufacturing processes (e.g., deposition of layers of materials) after the study specimen is situated thereon so that the study specimen will provide information regarding the results of the manufacturing process. The study specimen may have study regions formed thereon which are particularly suitable for study by atom probes, e.g., regions bearing raised protrusions, at virtually any point during the process, thereby greatly enhancing the speed and efficiency of specimen preparation. Status: Granted
34.	METHODS OF SAMPLING SPECIMENS FOR MICROANALYSIS	**392458101WO**	Kelly, Thomas F. Martens, Richard L. Goodman, Steven L.	**PCT Publication No.** WO2001/090761 Serial No. PCT/US01/16185 Filed: 18-May-2001	Priority to: U.S. Application No. 60/205,456, filed 5/19/2000 Status: Abandoned

PATENT
REEL: 024278 FRAME: 0318

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
35.	VACUUM CHAMBER WITH RECESSED VIEWING TUBE AND IMAGING DEVICE SITUATED THEREIN	392458102US	Strait, David Robert	U.S. Patent No. 6,762,415 Issued : 13-Jul-2004	(Abstract) Methods of sampling specimens for microanalysis, particularly microanalysis by atom probe microscopy, include steps of forming a study specimen in a first study object (as by use of focused ion beam milling); removing the study specimen from the study object; situating the study specimen on a second study object; and microanalyzing the study specimen. Where the first study object is of particular interest for study, the study specimen may be taken from a functional portion of the first study object so that microanalysis will provide information regarding this functional portion. Where the second study object is of particular interest for study, the second study object may be subjected to manufacturing processes (e.g., deposition of layers of materials) after the study specimen is situated thereon so that the study specimen will provide information regarding the results of the manufacturing process. The study specimen may have study regions formed thereon which are particularly suitable for study by atom probes, e.g., regions bearing raised protrusions, at virtually any point during the process, thereby greatly enhancing the speed and efficiency of specimen preparation. Status: Granted

PATENT
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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
36.	DELAY LINE ANODES	**392458103US1**	Gribb, Tye Travis Larkin, John Joseph	**U.S. Patent No.** 7,019,307 Issued : 28-Mar-2006	(Abstract) In detectors for imaging and other applications, delay line anodes are arrayed so as to allow detection of the location and/or timing of particle hits. The anodes are arrayed to provide an upper anode and one or more lower anodes, with particles incident on the upper anode passing in turn to the lower anodes. The anode arrays allow the use of identically manufactured anodes which are maintained in parallel spaced relation along the travel path of the particles of interest without dielectric material or other structure situated between the anodes. The spacing between the anodes is preferably adjustable so as to allow the installer and/or user to modify the performance characteristics of the array. The anodes may be made of pre-formed metal foil signal and ground layers laminated onto opposing sides of a dielectric sheet, or may be etched or otherwise formed from flex circuit material, so that the anodes and the overall array are light weight, compact, and flexible. Status: Granted
37.	HIGH RESOLUTION ATOM PROBE	**392458104CN**	Gribb, Tye Travis	**CN Patent No.** ZL200480019446.3 Serial No. 200480019446.3 Issued: 05-Jun-2009	Priority to: U.S. Application No. 60/476,348, filed 6/6/2003 Status: Granted; Annuity due May 26, 2010
38.	HIGH RESOLUTION ATOM PROBE	**392458104EP**	Gribb, Tye Travis	**EP Publication No.** 1639618 Serial No. 04753420.1 Filed: 26-May-2004	Priority to: U.S. Application No. 60/476,348, filed 6/6/2003 Status: Published

PATENT
REEL: 024278 FRAME: 0320

	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
39.	HIGH RESOLUTION ATOM PROBE	392458104US2	Gribb, Tye Travis	**U.S. Patent No.** 7,157,702 Issued : 02-Jan-2007	(Abstract) A three dimensional atom probe comprising a sharp specimen (10) coupled to a mounting means (12) where emission of charged particles is caused by application of a potential to the specimen tip (10) such that charged particles are influenced by filtering electrodes (206, 204) before impingement on a detection screen (202). Status: Granted; 3.5 year maintenance fee due 7/2/2010
40.	SHORT DURATION VARIABLE AMPLITUDE HIGH VOLTAGE PULSE GENERATOR	392458107US1	Weiner, Scott Albert Lenz, Daniel R.	**U.S. Application No.** 10/575,812 Filed: 14-Oct-2004	(Abstract) An improved electrical pulse generator incorporating MOSFET components, a programmable high voltage power supply, and a shaping network for generating short duration signals having narrow pulse widths and short rise times. Status: Abandoned
41.	SHORT DURATION VARIABLE AMPLITUDE HIGH VOLTAGE PULSE GENERATOR	392458107WO	Weiner, Scott Albert Lenz, Daniel R.	**PCT Publication No.** WO2005/038874 Serial No. PCT/US04/033821 Filed: 14-Oct-2004	Priority to: U.S. Application No. 60/510,970, filed 10/14/2003 Status: Converted
42.	LASER ATOM PROBES	392458108EP	Bunton, Joseph H. Kelly, Thomas F. Gribb, Tye Travis	**EP Publication No.** 1735812 Serial No. 04809594.7 Filed: 19-Aug-2004	Priority to: U.S. Application No. 60/555,772, filed 3/24/2004; U.S. Application No. 60/576,556, filed 6/3/2004 Status: Published
43.	LASER ATOM PROBES	392458108JP	Bunton, Joseph H. Kelly, Thomas F. Gribb, Tye Travis	**JP Publication No.** 2007-531218 Serial No. 2007-504936 Filed: 19-Aug-2004	Priority to: U.S. Application No. 60/555,772, filed 3/24/2004; U.S. Application No. 60/576,556, filed 6/3/2004 Status: Published

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
44.	LASER ATOM PROBE	392458108US2	Bunton, Joseph H. Kelly, Thomas F. Gribb, Tye Travis	U.S. Application No. 10/592,661 Filed: 19-Aug-2004	(Abstract) A laser atom probe (100) situates a counter electrode between a specimen mount and a detector (106), and provides a laser (116) having its beam (122) aligned to illuminate the specimen (104) through the aperture (110) of the counter electrode (108). The detector, specimen mount (102), and then be pulsed to bring the specimen to ionization. The timing of the laser pulses may be used to determine ion departure and arrival times allowing determination of the mass-to-charge ratios of the ions, thus their identities. Automated alignment methods are described wherein the laser is automatically directed to areas of interest. Status: Published; issue fee paid 2/10/2010
45.	LASER ATOM PROBE METHODS	392458109CN	Bunton, Joseph H. Olson, Jesse D.	CN Publication No. 1977350 Serial No. 200480043229.8 Filed: 19-Aug-2004	Priority to: U.S. Application No. 60/576,557, filed 6/3/2004 Status: Published
46.	LASER ATOM PROBE METHODS	392458109EP	Bunton, Joseph H. Olson, Jesse D.	EP Publication No. 1774561 Serial No. 04786529.0 Filed: 19-Aug-2004	Priority to: U.S. Application No. 60/576,557, filed 6/3/2004 Status: Published
47.	LASER ATOM PROBE METHODS	392458109JP	Bunton, Joseph H. Olson, Jesse D.	JP Publication No. 2008-502104 Serial No. 2007-515033 Filed: 19-Aug-2004	Priority to: U.S. Application No. 60/576,557, filed 6/3/2004 Status: Published

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
48.	LASER ATOM PROBE METHODS	392458109US1	Bunton, Joseph H. Olson, Jesse D.	**U.S. Patent No.** 7,652,269 Issued : 26-Jan-2010	(Abstract) A laser atom probe (100) situates a counter electrode between a specimen mount and a detector (106), and provides a laser (116) having its beam (122) aligned to illuminate the specimen (104) through the aperture (110) of the counter electrode (108). The detector, specimen mount (102), and/or the counter electrode may be charged to some boost voltage and then be pulsed to bring the specimen to ionization. The timing of the laser pulses may be used to determine ion departure and arrival times allowing determination of the mass-to-charge ratios of the ions, thus their identities. Automated alignment methods are described wherein the laser is automatically directed to areas of interest. Status: Granted
49.	LASER ATOM PROBE METHODS	392458109US2	Bunton, Joseph H. Olson, Jesse D.	**U.S. Application No.** 12/692,394 Filed: 22-Jan-2010	(Abstract) A laser atom probe situates a counter electrode between a specimen mount and a detector, and provides a laser having its beam aligned to illuminate the specimen through the aperture of the counter electrode. The detector, specimen mount, and/or the counter electrode may be charged to some boost voltage and then be pulsed to bring the specimen to ionization. The timing of the laser pulses may be used to determine the ion departure and arrival times allowing determination of the mass-to-charge ratios of the ions, thus their identities. Automated alignment methods are described wherein the laser is automatically directed to areas of interest. Status: Pending

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
50.	3-D ELEMENTAL COMPOSITION AND STRUCTURE OF BIOLOGICAL AND ORGANIC MATERIALS WITH ATOM PROBE MICROSCOPY	392458110US	Goodman, Steven L. Kelly, Thomas F. Kremer, John J.	U.S. Application No. 60/492,789 Filed: 06-Aug-2003	Status: Expired provisional
51.	METHOD TO DETERMINE 3-D ELEMENTAL COMPOSITION AND STRUCTURE OF BIOLOGICAL AND ORGANIC MATERIALS VIA ATOM PROBE MICROSCOPY	392458110US1	Goodman, Steven L. Kelly, Thomas F. Kremer, John J.	U.S. Application No. 10/567,869 Filed: 15-Nov-2006	(Abstract) Disclosed are methods to prepare a specimen for microanalysis, the specimens so prepared, and methods to analyze the specimens by atom probe microscopy. The specimens are prepared by embedding a specimen within an electrically conductive matrix to yield an embedded specimen; and then forming regions on the embedded specimen into shapes suitable for microanalysis by an atom probe. Status: Abandoned
52.	METHOD TO DETERMINE 3-D ELEMENTAL COMPOSITION AND STRUCTURE OF BIOLOGICAL AND ORGANIC MATERIALS VIA ATOM PROBE MICROSCOPY	392458110EP	Goodman, Steven L. Kelly, Thomas F. Kremer, John J.	EP Publication No. 1654299 Serial No. 04809536.8 Filed: 06-Aug-2004	Priority to: U.S. Application No. 60/492,789, filed 8/6/2003 Status: Abandoned
53.	METHOD TO DETERMINE 3-D ELEMENTAL COMPOSITION AND STRUCTURE OF BIOLOGICAL AND ORGANIC MATERIALS VIA ATOM PROBE MICROSCOPY	392458110WO	Goodman, Steven L. Kelly, Thomas F. Kremer, John J.	PCT Application No. PCT/US04/25332 Filed: 06-Aug-2004	Priority to: U.S. Application No. 60/492,789, filed 8/6/2003 Status: Converted
54.	LASER ATOM PROBES	392458111CN	Bunton, Joseph H. Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A.	CN Publication No. 101088137A Serial No. 200580044221.8 Filed: 20-Dec-2005	Priority to: U.S. Application No. 60/637,912, filed 12/21/2004 Status: Published

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
55.	LASER ATOM PROBES	**392458111EP**	Bunton, Joseph H. Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A.	**EP Publication No.** 1842221 Serial No. 05857198.5 Filed: 20-Dec-2005	Priority to: U.S. Application No. 60/637,912, filed 12/21/2004 Status: Published
56.	LASER ATOM PROBES	**392458111JP**	Bunton, Joseph H. Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A.	**JP Publication No.** 2008-524634 Serial No. 2007-548543 Filed: 20-Dec-2005	Priority to: U.S. Application No. 60/637,912, filed 12/21/2004 Status: Published
57.	LASER ATOM PROBES	**392458111KR**	Bunton, Joseph H. Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A	**KR Application No.** 10-2007-7013947 Filed: 20-Dec-2005	Priority to: U.S. Application No. 60/637,912, filed 12/21/2004 Status: Pending
58.	LASER ATOM PROBES	**392458111US1**	Bunton, Joseph H. Kelly, Thomas F. Lenz, Daniel R. Wiener, Scott A	**U.S. Application No.** 11/720,709 Filed: 20-Dec-2005	(Abstract) An atom probe includes a specimen mount that can hold a specimen to be analyzed. A detector is spaced apart from the specimen mount. Between the detector and specimen mount is a local electrode with an aperture. A laser is oriented to emit a laser beam toward the specimen mount at a nonzero angle with respect to the aperture plane, the aperture plane being oriented perpendicular to an ion travel path defined through the aperture between the specimen mount and detector. Status: Pending

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	Title	Our Ref.	Inventor(s)	Pat. No./Serial No. – Filing/Issue Date	Description and Status
59.	METHODS AND DEVICES FOR ATOM PROBE MASS RESOLUTION ENHANCEMENT	392458112US	Gribb, Tye Travis Olson, Jesse D. Lenz, Daniel D. Bunton, Joseph H.	U.S. Application No. 11/629,414 Filed: 24-Oct-2008	(Abstract) In an atom probe or other mass spectrometer wherein a specimen is subjected to ionizing pulses (voltage pulses, thermal pulses, etc.) which induce field evaporation of ions from the specimen, the evaporated ions are then subjected to corrective pulses which are synchronized with the ionizing pulses. These corrective pulses have a magnitude and timing sufficient to reduce the velocity distribution of the evaporated ions, thereby resulting in increased mass resolution for the atom probe/mass spectrometer. In a preferred arrangement, ionizing pulses are supplied to the specimen from a first counter electrode adjacent the specimen. The corrective pulses are then supplied from a second counter electrode which is coupled to the first via a passive or active network, with the network controlling the form (timing, amplitude, and shape) of the corrective pulses. Status: Published

60.	IMPROVEMENTS IN ATOM PROBES	N/A	Smith, George Cerezo, Alfred	**PCT Publication** No. WO/00682	Converted PCT
61.	ATOM PROBE	N/A	Panayi, Peter	**GB Application** No. GB0514216	Status: Published as GB2427961
62.	CURVED REFLECTRON	N/A	Panayi, Peter	**U.S. Application** No. 60/682,863	Expired Provisional
63.	AN ATOM PROBE USING A PICOSECOND OR FEMTOSECOND LASER	N/A	Panayi, Peter	**GB Publication** No. GB2427961	Status: Published

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64.	A REFLECTRON FOR USE IN A THREE-DIMENSIONAL ATOM PROBE	N/A	Panayi, Peter	**GB Publication No.** GB2426120	Status: Published
65.	REFLECTRON	N/A	Panayi, Peter	**EP Publication No.** EP1880406	Status: Published
66.	REFLECTRON	N/A	Panayi, Peter	**CN Publication No.** CN101176185	Status: Published
67.	ATOM PROBE PULSE ENERGY	N/A	Bunton, Joseph Hale	**EP Application No.** EP6827336	EP national phase of PCT/US06/042742; withdrawn 11/26/2008
68.	ATOM PROBE TEST STANDARDS AND ASSOCIATED METHODS	N/A	Ulfig, Robert M. Kelly, Thomas F. Wiener, Scott A. Gerstl, Stephan S.A. Larson, David J.	**DE Application No.** ?	DE national phase of PCT/US06/048823; withdrawn 6/24/2008
69.	METHODS OF SAMPLING SPECIMENS FOR MICROANALYSIS	N/A	Kelly, Thomas F. Martens, Richard L. Goodman, Steven L.	**AU Publication No.** 6328501	AU national phase of PCT/US01/16185; status unknown
70.	REFLECTRON	N/A	Panayi, Peter	**JP Publication No.** 2009507328 Serial No. 510634/2008	Priority to: GB. Application No. 0509638.3, filed 5/11/2005 Status: unknown

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