

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
CONVEYING PARTY DATA															
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>BonWoong KOO</td><td>08/12/2009</td></tr><tr><td>Christopher R. CAMPBELL</td><td>08/11/2009</td></tr><tr><td>Craig R. CHANEY</td><td>08/06/2009</td></tr><tr><td>Robert LINDBERG</td><td>08/11/2009</td></tr><tr><td>Alexander S. PEREL</td><td>08/20/2009</td></tr><tr><td>Wilhelm P. PLATOW</td><td>08/11/2009</td></tr></tbody></table>		Name	Execution Date	BonWoong KOO	08/12/2009	Christopher R. CAMPBELL	08/11/2009	Craig R. CHANEY	08/06/2009	Robert LINDBERG	08/11/2009	Alexander S. PEREL	08/20/2009	Wilhelm P. PLATOW	08/11/2009
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RECEIVING PARTY DATA															
<table border="1"><tr><td>Name:</td><td>Varian Semiconductor Equipment Associates, Inc.</td></tr><tr><td>Street Address:</td><td>35 Dory Road</td></tr><tr><td>City:</td><td>Gloucester</td></tr><tr><td>State/Country:</td><td>MASSACHUSETTS</td></tr><tr><td>Postal Code:</td><td>01930</td></tr></table>		Name:	Varian Semiconductor Equipment Associates, Inc.	Street Address:	35 Dory Road	City:	Gloucester	State/Country:	MASSACHUSETTS	Postal Code:	01930				
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PROPERTY NUMBERS Total: 1															
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CORRESPONDENCE DATA															
Fax Number: (978)281-3268 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>															
Phone: 978-282-5818															
Email: constance.ouellette@vsea.com															
Correspondent Name: Scott R. Faber															
Address Line 1: Varian Semiconductor Equipment Associate															
Address Line 2: 35 Dory Road															
Address Line 4: Gloucester, MASSACHUSETTS 01930															
ATTORNEY DOCKET NUMBER:	2008-011														

500941439

PATENT
REEL: 023121 FRAME: 0595

CH \$40.00 12533318

NAME OF SUBMITTER:

Scott R. Faber

Total Attachments: 5

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ASSIGNMENT

WHEREAS, the undersigned, to wit:

Bon Woong KOO
Christopher R. CAMPBELL
Craig R. CHANEY
Robert LINDBERG
Alexander S. PEREL
Wilhelm P. PLATOW

(Hereinafter collectively **ASSIGNOR**), have/has made a certain new and useful invention as set forth in an application for United States Letters Patent, entitled:

AN ION SOURCE AND A METHOD FOR IN-SITU CLEANING THEREOF

(X only one):

- (A) ☐ which was executed concurrently herewith and is being filed herewith in the United States Patent and Trademark Office;
- (B) ☐ which was executed on _____, 20__, and is being filed herewith in the United States Patent and Trademark Office;
- (C) ☒ which was filed as US Patent Application No. **12/533318**, filed on July 31, 2009.

AND WHEREAS, Varian Semiconductor Equipment Associates, Inc., (hereinafter **ASSIGNEE**), a corporation organized and existing under the laws of the state of Delaware, and having its principal place of business at 35 Dory Road, Gloucester, Massachusetts, 01930, is desirous of acquiring the entire right, title, and interest in and to said invention and any and all patents that may be obtained therefore, and in and to said application and any and all patents that may issue therefrom;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, **ASSIGNOR** does hereby sell, assign, transfer, and set over unto said **ASSIGNEE**, its successors, assigns, and legal representatives, all right, title, and interest in and to said invention throughout the world, and any and all patents of the United States and foreign countries that may be obtained therefor, and in and to said application, including any and all continuations, continuations-in-part, divisionals, reissues, re-examinations, substitutions, and extensions thereof, and any and all patents of the United States and foreign countries that may issue therefrom, such right, title, and interest including the right to file applications and obtain patents, utility models, industrial models and designs for said invention in the name of said **ASSIGNEE**, its successors, assigns, and legal representatives throughout the world, including all rights of priority, all rights to publish cautionary notices reserving ownership of said invention, and all rights to register said invention in appropriate registries;

ASSIGNOR also does hereby covenant that it has the full right to convey the entire right, title, and interest herein assigned, and that it has not and will not execute any agreement in conflict herewith;

ASSIGNOR also does hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States on said invention or resulting from said application, including any continuations, continuations-in-part, divisions, reissues, re-examinations, substitutions, and extensions thereof, to said **ASSIGNEE**, its successors, assigns, and legal representatives as the **ASSIGNEE** of the entire right, title, and interest herein assigned;

ASSIGNOR also does hereby agree to, at any time, upon request, without further or additional consideration, but at the expense of said **ASSIGNEE**, its successors, assigns, or legal representatives, execute and deliver any and all papers, make all rightful oaths, and do all lawful acts that may be necessary or desirable to perfect the entire right, title, and interest here assigned in said **ASSIGNEE**, its successors, assigns, and legal representatives, and generally do everything possible to vest the entire right, title and interest herein assigned in said **ASSIGNEE**, its successors, assigns, and legal representatives;

ASSIGNOR also does hereby agree to, at any time, upon request, without further or additional consideration, but at the expense of said **ASSIGNEE**, its successors, assigns, or legal representatives, execute and deliver any and all papers, make all rightful oaths, and do all lawful acts that may be necessary or desirable to make application for and obtain any and all continuations, continuations-in-part, divisions, reissues, re-examinations, substitutions, and extensions of said application, or any application on said invention, or any patent issuing therefor or therefrom;

ASSIGNOR also does hereby agree to, at any time, upon request, without further or additional consideration but at the expense of said **ASSIGNEE**, its successors, assigns, and legal representatives, communicate to said **ASSIGNEE**, its successors, assigns, and legal representatives, any known facts relating to said invention or said application or any patent issuing therefor or therefrom, and testify as to the same in any interference or other litigation proceeding when requested to do so, and aid said **ASSIGNEE**, its successors, assigns, and legal representatives, in obtaining and enforcing property protection for said invention in all countries;

ASSIGNOR also does hereby grant the Legal Department of Varian Semiconductor Equipment Associates, Inc., at the address shown above, the power to insert on this assignment any further information, including, but not limited to application number(s) and filing date(s), which may be necessary or desirable in order to comply with any rule or request of the United States Patent and Trademark Office for the purposes of recording this document.

ASSIGNOR also does now hereby execute this document on the date(s) indicated below:

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 12 day of August, 2009.

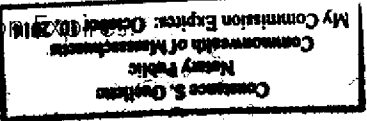
Bon Woong Koo
Name: BON WOONG KOO

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **BON WOONG KOO**, personally known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 12th day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires: October 10, 2014



IN WITNESS WHEREOF, I have hereunto set my hand and seal this 11 day of August, 2009.

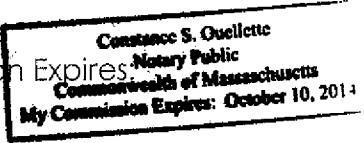
Christopher R. Campbell
Name: CHRISTOPHER R. CAMPBELL

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **CHRISTOPHER R. CAMPBELL** known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 11th day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires: October 10, 2014



IN WITNESS WHEREOF, I have hereunto set my hand and seal this 6 day of Aug, 2009.

Craig R. Chaney
Name: CRAIG R. CHANEY

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **CRAIG R. CHANEY**, personally known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 6th day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires:

Constance S. Ouellette
Notary Public
Commonwealth of Massachusetts
My Commission Expires: October 10, 2014

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 11th day of August, 2009.

Robert Lindberg
Name: ROBERT LINDBERG

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **ROBERT LINDBERG**, personally known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 11th day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires:

Constance S. Ouellette
Notary Public
Commonwealth of Massachusetts
My Commission Expires: October 10, 2014

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 20th day of August, 2009.

Alexander Perel

Name: ALEXANDER S. PEREL

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **ALEXANDER S. PEREL**, personally known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 20th day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires

Constance S. Ouellette
Notary Public
Commonwealth of Massachusetts
My Commission Expires: October 10, 2014

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 11 day of August, 2009.

W. Platow

Name: WILHELM P. PLATOW

COMMONWEALTH/STATE OF MASSACHUSETTS
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named **WILHELM P. PLATOW**, personally known to me and/or proved to me on the basis of satisfactory evidence to be the person who signed and sealed the foregoing instrument and acknowledged the same to be his or her own free act and deed, this 11 day of August, 2009.

Constance S. Ouellette
Notary Public

My Commission Expires

Constance S. Ouellette
Notary Public
Commonwealth of Massachusetts
My Commission Expires: October 10, 2014