

## PATENT ASSIGNMENT

Electronic Version v1.1  
Stylesheet Version v1.1

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>Peter L. KELLERMAN</td><td>04/22/2011</td></tr><tr><td>Frederick CARLSON</td><td>04/22/2011</td></tr></tbody></table>	Name	Execution Date	Peter L. KELLERMAN	04/22/2011	Frederick CARLSON	04/22/2011					
Name	Execution Date										
Peter L. KELLERMAN	04/22/2011										
Frederick CARLSON	04/22/2011										
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	
Name:	VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.										
Street Address:	35 Dory Road										
City:	Gloucester										
State/Country:	MASSACHUSETTS										
Postal Code:	01930										
PROPERTY NUMBERS Total: 1											
<table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number:</td><td>13039789</td></tr></tbody></table>	Property Type	Number	Application Number:	13039789							
Property Type	Number										
Application Number:	13039789										
CORRESPONDENCE DATA											
Fax Number: (978)281-3268 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
Phone: 978-282-5809											
Email: constance.ouellette@vsea.com											
Correspondent Name: Nathaniel Lucek											
Address Line 1: Varian Semiconductor Equipment Associate											
Address Line 2: 35 Dory Road											
Address Line 4: Gloucester, MASSACHUSETTS 01930											
ATTORNEY DOCKET NUMBER:	2010-023										
NAME OF SUBMITTER:	Nathanil Lucek										
Total Attachments: 4 source=2010-023Assignment#page1.tif source=2010-023Assignment#page2.tif source=2010-023Assignment#page3.tif source=2010-023Assignment#page4.tif											

CH \$40.00 13039789

## ASSIGNMENT

WHEREAS, the undersigned, to wit:

Peter L. KELLERMAN  
Frederick CARLSON

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

## GAS-LIFT PUMPS FOR FLOWING AND PURIFYING MOLTEN SILICON

(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. 13/039789 filed on March 3, 2011.

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;

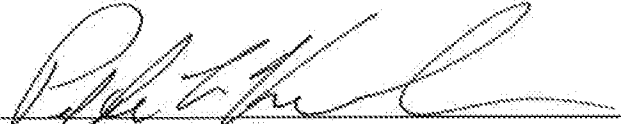
**ASSIGNOR** also does hereby agree to, at any time, upon request, without further or additional consideration, but at the expense of said **ASSIGNEE**, its successors, assigns, or legal representatives, execute and deliver any and all papers, make all rightful oaths, and do all lawful acts that may 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.

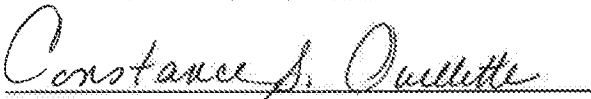
**ASSIGNOR** also does now hereby execute this document on the date(s) indicated below:

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 22 day of March, 2011.

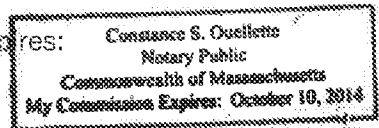
  
Name: PETER L. KELLERMAN

COMMONWEALTH/STATE OF MASSACHUSETTS  
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named PETER L. KELLERMAN, 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 22nd day of March, 2011.

  
Notary Public

My Commission Expires:



IN WITNESS WHEREOF, I have hereunto set my hand and seal this \_\_\_\_ day of \_\_\_\_\_, 2011.

\_\_\_\_\_  
Name: FREDERICK CARLSON

COMMONWEALTH/STATE OF MASSACHUSETTS  
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named FREDERICK CARLSON, 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 \_\_\_\_ day of \_\_\_\_\_, 2011.

\_\_\_\_\_  
Notary Public

My Commission Expires:

IN WITNESS WHEREOF, I have hereunto set my hand and seal this \_\_\_\_ day of \_\_\_\_\_, 2011.

\_\_\_\_\_  
Name: PETER L. KELLERMAN

COMMONWEALTH/STATE OF MASSACHUSETTS  
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named PETER L. KELLERMAN, 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 \_\_\_\_ day of \_\_\_\_\_, 2011.

\_\_\_\_\_  
Notary Public

My Commission Expires:

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 22 day of April, 2011.

*Frederick Carlson*

\_\_\_\_\_  
Name: FREDERICK CARLSON

COMMONWEALTH/STATE OF MASSACHUSETTS  
COUNTY OF ESSEX

Before me, a Notary Public did personally appear the above-named FREDERICK CARLSON, 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 \_\_\_\_ day of \_\_\_\_\_, 2011.

\_\_\_\_\_  
Notary Public

My Commission Expires: