PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SVETLANA RADOVANOV	06/14/2018
ANA SAMOLOV	06/14/2018
SHENGWU CHANG	07/23/2018
FRANK SINCLAIR	05/21/2018
PETER KELLERMAN	06/15/2018

RECEIVING PARTY DATA

Name:	VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.
Street Address:	35 DORY ROAD
City:	GLOUCESTER
State/Country:	MASSACHUSETTS
Postal Code:	01930

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15948736

CORRESPONDENCE DATA

Fax Number: (919)999-2798

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 919-636-4767

Email: bjackson@kdbfirm.com

Correspondent Name: KACVINSKY DAISAK BLUNI PLLC
Address Line 1: 101 CARNEGIE CENTER SUITE 106
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ATTORNEY DOCKET NUMBER:	44014837
NAME OF SUBMITTER:	BARBARA J. JACKSON
SIGNATURE:	/Barbara J. Jackson/
DATE SIGNED:	08/08/2018

Total Attachments: 9

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PATENT REEL: 046587 FRAME: 0736

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ASSIGNMENT

WHEREAS, the undersigned, to wit:

Svetlana Radovanov Ana Samolov Shengwu Chang Frank Sinclair Peter Kellerman

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

APPARATUS AND METHOD FOR CONTROLLING ION BEAM PROPERTIES USING ENERGY FILTER

A UII	iy uic).
A)	which was executed concurrently herewith and is being filed herewith in the United
	States Patent and Trademark Office;
8)	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. 15/948,736, filed on April 9, 2018

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, reexaminations, 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:

08/14/2018 Date

Name: Svetlana Radovanov

<u>06/14/2018</u> Date	Name: Ana Samolov
<u>7/23/201</u> 8 Date	Name: Shengwu Chang
 Date	Name: Frank Sinclair
	Name: Peter Kailerman

ASSIGNMENT

WHEREAS, the undersigned, to wit:

Svetlana Radovanov Ana Samolov Shengwu Chang Frank Sinclair Peter Kellerman

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APPARATUS AND METHOD FOR CONTROLLING ION BEAM PROPERTIES USING ENERGY FILTER

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(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)	States Patent and Trademark Office;

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Name: Svetlana Radovanov

Date	Name: Ana Samolov
Date	Name: Shengwu Chang
5/21/18	
Dáte /	Name: Frank Sinclair
	Namer Peter Kellerman

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Name: Svetlana Radovanov

Date	Name: Ana Samolov
Date	Name: Shengwu Chang
Date	Name: Frank Sinclair
<u>6/15/2018</u> Date	Name: Peter Kellerman