504628945 11/06/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4675663

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Paul D. Butterfield	09/26/2017
Thomas H. Osterheld	09/25/2017
Jeonghoon Oh	09/25/2017
Shou-Sung Chang	09/25/2017
Steven M. Zuniga	09/26/2017
Fred C. Redeker	09/25/2017

RECEIVING PARTY DATA

Name:	APPLIED MATERIALS, INC.	
Street Address:	et Address: 3050 BOWERS AVENUE	
City:	SANTA CLARA	
State/Country:	Country: CALIFORNIA	
Postal Code: 95054		

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	15691416	

CORRESPONDENCE DATA

Fax Number: (877)769-7945

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: (650) 839-5070 **Email:** apsi@fr.com

Correspondent Name: DAVID J. GOREN

Address Line 1: FISH & RICHARDSON P.C.

Address Line 2: P.O.BOX 1022

Address Line 4: MINNEAPOLIS, MINNESOTA 55440-1022

ATTORNEY DOCKET NUMBER:	05542-0902001
NAME OF SUBMITTER:	NANCY GRANT
SIGNATURE:	/Nancy Grant/
DATE SIGNED:	11/06/2017

PATENT 504628945 REEL: 044041 FRAME: 0745

Total Attachments: 2

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PATENT REEL: 044041 FRAME: 0746

ASSIGNMENT FOR APPLICATION FOR PATENT

WHEREAS:

Names and Addresses of Inventors:

-	Paul D. Butterfield		
	1684 Kevin Drive		
	San Jose, CA 95124		
	Thomas H. Osterheld		
1195 Barbara Avenue			
	Mountain View, CA 94040		
	Jeonghoon Oh		
	18372 Purdue Drive		
	Saratoga, CA 95070		

Shou-Sung Chang 1553 Alison Ave Mountain View, CA 94040
Steven M. Zuniga 351 Los Robles Road

Soquel, CA 95073
Fred C. Redeker
1801 Sioux Drive
Fremont, CA 94539

(hereinafter referred to as Assignors), have invented a certain invention entitled:

POLISHING SYSTEM WITH ANNULAR PLATEN OR POLISHING PAD FOR SUBSTRATE MONITORING

for which application for Letters Patent in the United States was filed on 8/30/2017, under Serial

No. 15/691,416, executed on even date herewith; and

WHEREAS, Applied Materials, Inc., a corporation of the State of Delaware, having a place of business at 3050 Bowers Avenue, Santa Clara, California 95054 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said application (hereinafter referred to as the Application), and the invention disclosed therein (hereinafter referred to as the Invention), and in and to all embodiments of the Invention, heretofore conceived, made or discovered by said Assignors, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as the Patents) thereon granted in any and all countries and groups of countries.

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance

PATENT REEL: 044041 FRAME: 0747 of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefor and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.
- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

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IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

Date:	Sept. 26, 2017	Nay O. Buth has
	/	PAUL D. BUTTERFIELD
Date:	9/25/17	2
		THOMAS H. OSTERHELD
Date:	9/25/17	and
		JEONGHOON OH
Date:	9-25-2017	
		SHOU-SUNG CHANG
Date:	9/26/17	Sheep M
	,	STEVÉN M. ZUNIGA
Date:	9-25-17	Fred (- Pedolin
		FRED C. REDEKER

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RECORDED: 11/06/2017