

| |
|--------------------------------------|
| PATENT ASSIGNMENT COVER SHEET |
|--------------------------------------|

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4728107

| | |
|------------------------------|----------------|
| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------------|----------------|
| CHIEN-TEH KAO | 08/08/2016 |
| BENJAMIN SCHMIEGE | 08/08/2016 |
| XUESONG LU | 12/06/2017 |
| JUNO YU-TING HUANG | 08/08/2016 |
| YU LEI | 08/08/2016 |
| YUNG-HSIN LEE | 08/08/2016 |
| SRINIVAS GANDIKOTA | 12/11/2017 |
| RAJKUMAR JAKKARAJU | 08/13/2016 |
| CHIKUANG CHARLES WANG | 11/29/2017 |
| GHAZAL SAHELI | 08/10/2016 |
| BENJAMIN C. WANG | 12/04/2017 |
| XINLIANG LU | 11/29/2017 |
| PINGYAN LEI | 08/08/2016 |

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|----------------------------|----------|
| Application Number: | 15184521 |

CORRESPONDENCE DATA**Fax Number:**

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.

Email: lmurphy@dsiplaw.com
Correspondent Name: SERVILLA WHITNEY LLC
Address Line 1: 33 WOOD AVENUE SOUTH
Address Line 2: SUITE 830

PATENT

| | |
|---|------------------------------------|
| Address Line 4: | ISELIN, NEW JERSEY 08830 |
| ATTORNEY DOCKET NUMBER: | 021782USA |
| NAME OF SUBMITTER: | JEFFREY I. BLANKMAN |
| SIGNATURE: | /Jeffrey I. Blankman, Reg. #57826/ |
| DATE SIGNED: | 12/11/2017 |
| Total Attachments: 13 source=00708093#page1.tif source=00708093#page2.tif source=00708093#page3.tif source=00708093#page4.tif source=00708093#page5.tif source=00708093#page6.tif source=00708093#page7.tif source=00708093#page8.tif source=00708093#page9.tif source=00708093#page10.tif source=00708093#page11.tif source=00708093#page12.tif source=00708093#page13.tif | |

ASSIGNMENT FOR APPLICATION FOR PATENT

WHEREAS:

Names and Addresses of Inventors

| | | | |
|----|---|-----|---|
| 1) | Chien-Teh Kao 715 Starbush Drive Sunnyvale, CA, 94086 United States of America | 8) | Rajkumar Jakkuraju 3577 Corpley Ave San Jose, CA, 95132 United States of America |
| 2) | Benjamin Schmiege 1000 Kiely Blvd, #56 <i>1124 Almaden St.</i> Santa Clara, CA, 95051 <i>95051</i> United States of America | 9) | Chikuang Charles Wang 1186 Washoe Drive San Jose, CA, 95120 United States of America |
| 3) | Xuesong Lu 1513 Stockbridge Drive San Jose, CA, 95130 United States of America | 10) | Ghazal Saheli 3993 Valerie Dr. Campbell, CA, 95008 United States of America |
| 4) | Juno Yu-Ting Huang 751 Torrey Ave Sunnyvale, CA, 94086 United States of America | 11) | Benjamin C. Wang 874 Bing Dr., Apt. 2 Santa Clara, CA, 95051 United States of America |
| 5) | Yu Lei 504 Roxbury Way Belmont, CA, 94002 United States of America | 12) | Xinliang Lu 45 Japala Court Fremont, CA, 94539 United States of America |
| 6) | Yung-Hsin Lee <i>1237 Avenida Las Brisas</i> 1000 Escalon Ave, Apt. E 3045 Sunnyvale, CA, 94085 <i>San Jose CA 95131</i> United States of America | 13) | Pingyan Lei: <i>1240 Rosalinda Ave</i> 1900 Magdalena Circle, Apt #75 Santa Clara, CA, 95051 <i>San Jose, CA 95117</i> United States of America |
| 7) | Srinivas Gandikota 2727 Monroe Street Santa Clara, CA, 95051 United States of America | | |

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

"Deposition Methods For Uniform And Conformal Hybrid Titanium Oxide Films"

for which application for Letters Patent in the United States was filed on June 16, 2016,

under Serial No. 15/184,521, executed on even date herewith; and

ASSIGNMENT FOR APPLICATION FOR PATENT

WHEREAS:

Names and Addresses of Inventors

| | |
|----|---|
| 1) | Chien-Teh Kao 715 Starbush Drive Sunnyvale, CA, 94086 United States of America |
| 2) | Benjamin Schmiede 1000 Kiely Blvd, #56 Santa Clara, CA, 95051 United States of America |
| 3) | Xuesong Lu 1513 Stockbridge Drive San Jose, CA, 95130 United States of America |
| 4) | Juno Yu-Ting Huang 751 Torreya Ave Sunnyvale, CA, 94086 United States of America |
| 5) | Yu Lei 504 Roxbury Way Belmont, CA, 94002 United States of America |
| 6) | Yung-Hsin Lee 1000 Escalon Ave., Apt. F-3045 Sunnyvale, CA, 94085 United States of America |
| 7) | Srinivas Gandikota 2727 Monroe Street Santa Clara, CA, 95051 United States of America |

| | |
|-----|--|
| 8) | Rajkumar Jakkaraju 3577 Corpley Ave San Jose, CA, 95132 United States of America |
| 9) | Chikuang Charles Wang 1186 Washoe Drive San Jose, CA, 95120 United States of America |
| 10) | Ghazal Saheli 3993 Valerie Dr. Campbell, CA, 95008 United States of America |
| 11) | Benjamin C. Wang 874 Bing Dr., Apt. 2 1932 Markham Way Santa Clara, CA, 95051 Sacramento, CA 95818 United States of America |
| 12) | Xinliang Lu 45 Japala Court Fremont, CA, 94539 United States of America |
| 13) | Pingyan Lei 1909 Magdalena Circle, Apt#75 Santa Clara, CA, 95051 United States of America |

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

"Deposition Methods For Uniform And Conformal Hybrid Titanium Oxide Films"

for which application for Letters Patent in the United States was filed on June 16, 2016,

under Serial No. 15/184,521, 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, CA, 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 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 therefore 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.

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

1) 08/08/2016 2016 *Chien-Teh Kao*
(INVENTOR) Chien-Teh Kao

2) _____, 2016 _____
(INVENTOR) Benjamin Schmiege

WHEREAS, Applied Materials, Inc., a corporation of the State of Delaware, having a place of business at 3050 Bowers Avenue, Santa Clara, CA, 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 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 therefore 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.

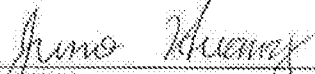
IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below:

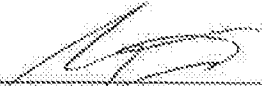
1) _____, 2016 _____
(INVENTOR) Chien-Teh Kao

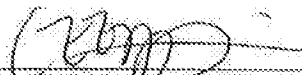
2) 8/8/16, 2016 _____
(INVENTOR) Benjamin Schmiege

- 3) 12/6, 2017 
(INVENTOR) Xuesong Lu
- 4) _____, 2017
(INVENTOR) Juno Yu-Ting Huang
- 5) _____, 2017
(INVENTOR) Yu Lei
- 6) _____, 2017
(INVENTOR) Yung-Hsin Lee
- 7) _____, 2017
(INVENTOR) Srinivas Gandikota
- 8) _____, 2017
(INVENTOR) Rajkumar Jakkuraju
- 9) _____, 2017
(INVENTOR) Chikuang Charles Wang
- 10) _____, 2017
(INVENTOR) Ghazal Saheli
- 11) _____, 2017
(INVENTOR) Benjamin C. Wang
- 12) _____, 2017
(INVENTOR) Xinliang Lu

- 3) _____, 2016
(INVENTOR) Xuesong Lu

- 4) 08/08, 2016

(INVENTOR) Juno Yu-Ting Huang

- 5) 08/08/16, 2016

(INVENTOR) Yu Lei

- 6) 08/08/16, 2016

(INVENTOR) Wang Hsin Lee

- 7) _____, 2016
(INVENTOR) Srinivas Gandikota

- 8) _____, 2016
(INVENTOR) Rajkumar Jakkuraju

- 9) _____, 2016
(INVENTOR) Chikuang Charles Wang

- 10) _____, 2016
(INVENTOR) Ghazal Saheli

- 11) _____, 2016
(INVENTOR) Benjamin C. Wang

- 12) _____, 2016
(INVENTOR) Xinliang Lu

3) _____, 2017

(INVENTOR) Xuesong Lu

4) _____, 2017

(INVENTOR) Juno Yu-Ting Huang

5) _____, 2017

(INVENTOR) Yu Lei

6) _____, 2017

(INVENTOR) Yung-Hsin Lee

7) 12/11/ _____, 2017

(INVENTOR) Srinivas Gandikota

8) _____, 2017

(INVENTOR) Rajkumar Jakkuraju

9) _____, 2017

(INVENTOR) Chikuang Charles Wang

10) _____, 2017


(INVENTOR) Ghazal Saheli


11) _____, 2017

(INVENTOR) Benjamin C. Wang

12) _____, 2017

(INVENTOR) Xinliang Lu

- 3) _____ 2016
(INVENTOR) Xuesong Lu
- 4) _____ 2016
(INVENTOR) Juno Yu-Ting Huang
- 5) _____ 2016
(INVENTOR) Yu Lei
- 6) _____ 2016
(INVENTOR) Yung-Hsin Lee
- 7) _____ 2016
(INVENTOR) Srinivas Gandikota
- 8) 08-13- _____ 2016

(INVENTOR) Rajkumar Jakkuraju
- 9) _____ 2016
(INVENTOR) Chikuang Charles Wang
- 10) _____ 2016
(INVENTOR) Ghazal Saheli
- 11) _____ 2016
(INVENTOR) Benjamin C. Wang
- 12) _____ 2016
(INVENTOR) Xinliang Lu

- 3) _____, 2017
(INVENTOR) Xuesong Lu
- 4) _____, 2017
(INVENTOR) Juno Yu-Ting Huang
- 5) _____, 2017
(INVENTOR) Yu Lei
- 6) _____, 2017
(INVENTOR) Yung-Hsin Lee
- 7) _____, 2017
(INVENTOR) Srinivas Gandikota
- 8) _____, 2017
(INVENTOR) Rajkumar Jakkuraju
- 9) *November 29th*, 2017

(INVENTOR) Chikuang Charles Wang
- 10) _____, 2017
(INVENTOR) Ghazal Saheli
- 11) _____, 2017
(INVENTOR) Benjamin C. Wang
- 12) _____, 2017
(INVENTOR) Xinliang Lu

Attorney Docket No. 021782/USA/DSM/DSM_ENG/AG

- 3) _____, 2016

(INVENTOR) Xuesong Lu

- 4) _____, 2016

(INVENTOR) Juno Yu-Ting Huang

- 5) _____, 2016

(INVENTOR) Yu Lei

- 6) _____, 2016

(INVENTOR) Yung-Hsin Lee

- 7) _____, 2016


(INVENTOR) Srinivas Gandikota

- 8) _____, 2016

(INVENTOR) Rajkumar Jakkuraju

- 9) _____, 2016

(INVENTOR) Chikwang Charles Wang

- 10) 08110, 2016


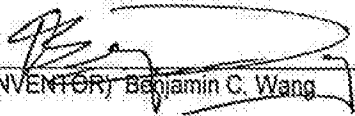
(INVENTOR) Ghazal Saheli

- 11) _____, 2016

(INVENTOR) Benjamin C. Wang

- 12) _____, 2016

(INVENTOR) Xinliang Lu

- 3) _____, 2017
(INVENTOR) Xuesong Lu
- 4) _____, 2017
(INVENTOR) Juno Yu-Ting Huang
- 5) _____, 2017
(INVENTOR) Yu Lei
- 6) _____, 2017
(INVENTOR) Yung-Hsin Lee
- 7) _____, 2017
(INVENTOR) Srinivas Gandikota
- 8) _____, 2017
(INVENTOR) Rajkumar Jakkuraju
- 9) _____, 2017
(INVENTOR) Chikuang Charles Wang
- 10) _____, 2017
(INVENTOR) Ghazal Saheli
- 11) 12/4, 2017

(INVENTOR) Benjamin C. Wang
- 12) _____, 2017
(INVENTOR) Xinliang Lu

- 3) _____, 2017
(INVENTOR) Xuesong Lu

- 4) _____, 2017
(INVENTOR) Juno Yu-Ting Huang

- 5) _____, 2017
(INVENTOR) Yu Lei

- 6) _____, 2017
(INVENTOR) Yung-Hsin Lee

- 7) _____, 2017
(INVENTOR) Srinivas Gandikota

- 8) _____, 2017
(INVENTOR) Rajkumar Jakkuraju

- 9) _____, 2017
(INVENTOR) Chikuang Charles Wang


- 10) _____, 2017
(INVENTOR) Ghazal Saheli

- 11) _____, 2017
(INVENTOR) Benjamin C. Wang

- 12) 11/29, 2017

(INVENTOR) Xinliang Lu

13) 8/8/2016, 2016



(INVENTOR) Pingyan Lei