PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4910279

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DAPING YAO	12/08/2017
JIANG LU	12/08/2017
CAN XU	12/08/2017
PAUL F. MA	12/12/2017
MEI CHANG	12/08/2017

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:	15823422

CORRESPONDENCE DATA

Fax Number: (732)935-7122

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.

732-935-7100 Phone:

Email: Izaveta@mtiplaw.com

MOSER TABOADA/ALAN TABOADA **Correspondent Name:**

Address Line 1: 1030 BROAD STREET

Address Line 2: SUITE 203

Address Line 4: SHREWSBURY, NEW JERSEY 07702

ATTORNEY DOCKET NUMBER:	APPM24594
NAME OF SUBMITTER:	ALAN TABOADA
SIGNATURE:	/ALAN TABOADA/
DATE SIGNED: 04/11/2018	

Total Attachments: 3

PATENT REEL: 045507 FRAME: 0217

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> PATENT REEL: 045507 FRAME: 0218

Case No. 24594USA

ASSIGNMENT FOR APPLICATION FOR PATENT

WHEREAS:

Names and Addresses of Inventors:

1) DAPING YAO

1571 Jacob Ave San Jose, CA 95118

2) JIANG LU

968 Matterhorn CT. Milpitas, CA 95035

3) CAN XU

4589 Elmhurst Drive San Jose, CA 95129

4) PAUL F MA

2181 Rancho McCormick Blvd Santa Clara, CA 95050

5) MEI CHANG

12881 Corte De Arguello Saratoga, CA 95070

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

METHODS TO FILL HIGH ASPECT RATIO FEATURES ON SEMICONDUCTOR SUBSTRATES WITH MOCVD COBALT FILM

for which we have filed an application for a Patent of the United States on November 27, 2017, Serial No. 15/823,422; which claims priority to United States provisional patent application Serial No. 62/426,590, filed on November 27, 2016; 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 Application), and the invention disclosed therein (hereinafter referred to as Invention), and in and to all embodiments of the Invention, heretofore conceived, made or discovered by said Assignor, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as 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 719935_1

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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 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.

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

(DATE)	
12/38/247 (DATE)	DAPING YAO
12/08/2017 (DATE)	JIANG LU
<u>/Z/12/17</u> (DATE)	PAUL F MA
12/8/2017 (DATE)	MEI CHANG

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.

- Said Assigners 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 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.
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