

12-18-2000

11-27-00

Form I TO 1595



U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

To the Honorable Commissioner

101553809

attached original documents or copy thereof and address of receiving parties:

1. Name of conveying parties:

Execution Date: July 10, 2000

Name: Applied Materials, Inc.  
Internal Address: Legal Affairs Department - M/S 2051  
Street Address: P. O. Box 450A  
City: Santa Clara State: CA Zip: 95052

Moris Kori;  
Alfred W. Mak;  
Jeong Soo Byun;  
Lawrence Chung-Lai Lei;  
Hua Chung;  
Ashok Sinha; and  
Ming Xi

Additional Names & Addresses attached?  Yes  No

Additional names of conveying Parties attached?  Yes  No

3. Nature of conveyance;

- Assignment  Merger
- Security Agreement  Change of Name
- Other

Execution Date: See Above

4. Application number(s) or patent number(s): 09/605,593

If this document is being filed together with a new application, the execution date of the application is: Herewith

For: BIFURCATED DEPOSITION PROCESS FOR DEPOSITING REFRACTORY METAL LAYERS EMPLOYING ATOMIC LAYER DEPOSITION AND CHEMICAL VAPOR DEPOSITION TECHNIQUES

A. Patent Application No. 09/605,593; filed June 28, 2000

B. Patent No.(s)

Additional Numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning this document should be mailed:

Name: ROBERT W. MULCAHY  
Internal Address: Applied Materials, Inc.  
Legal Affairs Department - M/S 2061  
Street Address: P. O. Box 450A  
City: Santa Clara State: CA Zip: 95052

6. Total number of applications and patent involved: 1

7. Total Fee (37 CFR 3.41) \$40.00  
 Enclosed  
 Authorized to be charged to deposit account

8. Deposit Account Number:

Do Not Use This Space

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and any attached copy is a true copy of the original document.

Kenneth C. Brooks, Reg. No. 38,393  
Name of Person Signing

*Kenneth C. Brooks* 11/20/00  
Signature Date

10. Total number of pages comprising cover sheet, attachments, and document: 8

Mail documents to be recorded with the required cover sheet information to:  
Commissioner of Patents and Trademarks, Box Assignment  
Washington, D.C. 20231

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

Names and Addresses of Inventors:

1)	Moris Kori 55 Hamilton Court Palo Alto, California 94301	2)	Alfred W. Mak 32722 Fellows Court Union City, California 94587
3)	Jeong Soo Byun 20975 Valley Green Drive #257 Cupertino, California 95014	4)	Lawrence Chung-Lai Lei 1594 Country Club Drive Milpitas, California 95035
5)	Hua Chung 4645 Piper Drive San Jose, California 95129		

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

**BIFURCATED DEPOSITION PROCESS FOR DEPOSITING REFRACTORY METAL LAYERS  
EMPLOYING ATOMIC LAYER DEPOSITION AND CHEMICAL VAPOR DEPOSITION  
TECHNIQUES**for which application for Letters Patent in the United States was filed on 06/28/2000 under Serial No. 09/605,593, 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 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.

5. Said Assignors hereby authorize and request the attorneys of record to insert, where indicated above, the application number and filing date of said application when known

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

1) July 18, 2000 Moris Kori  
Moris Kori

2) 7/11/00, 2000 Alfred W. Mak  
Alfred W. Mak

3) 7/11/2000, 2000 J. S. Byun  
Jeong Soo Byun

4) July 10, 2000 Lawrence Chung-Lai Lei  
Lawrence Chung-Lai Lei

5) July 10, 2000 Hua Chung  
Hua Chung

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

Names and Addresses of Inventors:

1)	Ashok Sinha 4176 Hubbart Drive Palo Alto, California 94306	2)	Ming Xi 138 Beaumere Way Milpitas, California 95035
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(hereinafter referred to as Assignors), have invented a certain invention entitled

**BIFURCATED DEPOSITON PROCESS FOR DEPOSITING REFRACTORY METAL LAYERS EMPLOYING ATOMIC LAYER DEPOSITION AND CHEMICAL VAPOR DEPOSITION TECHNIQUES**

for which application for Letters Patent in the United States is filed herewith,

having serial number 09/005,593, filed on June 28, 2000 herewith.

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.

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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.

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

1) \_\_\_\_\_, 2000 Ashok K Sinha  
Ashok Sinha

2) \_\_\_\_\_, 2000 \_\_\_\_\_  
Ming Xi

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

Names and Addresses of Inventors:

1) Ashok Sinha 4176 Hubbart Drive Palo Alto, California 94306	2) Ming Xi 138 Beaumere Way Milpitas, California 95035
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IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

1) \_\_\_\_\_, 2000

\_\_\_\_\_  
Ashok Sinha

2) 10/30 \_\_\_\_\_, 2000

Ming Xi  
\_\_\_\_\_  
Ming Xi