

**ASSIGNMENT RECORDATION COVER SHEET  
-PATENTS ONLY-**

Commissioner of Patents:

Please record the attached document.

1. Name of conveying party:
- |    |                         |    |                    |
|----|-------------------------|----|--------------------|
| a) | Ron Rulkens             | e) | Bunsen Nie         |
| b) | George D. Papasouliotis | f) | Adrianne K. Tipton |
| c) | Dennis M. Hausmann      | g) | Jeff Tobin         |
| d) | Raihan M. Tarafdar      |    |                    |

2. Name and address of receiving party:
- a) Name: Novellus Systems, Inc.  
Address: 3970 North First Street  
San Jose, California 95134

3. Nature of conveyance:
- |                                     |                    |                          |                   |
|-------------------------------------|--------------------|--------------------------|-------------------|
| <input checked="" type="checkbox"/> | Assignment         | <input type="checkbox"/> | Merger            |
| <input type="checkbox"/>            | Security Agreement | <input type="checkbox"/> | Change of Name    |
| <input type="checkbox"/>            | Other _____        | <input type="checkbox"/> | License Agreement |

Execution Date:

- |    |                  |    |                  |
|----|------------------|----|------------------|
| a) | April 7, 2005    | e) | February 2, 2005 |
| b) | January 26, 2005 | f) | February 2, 2005 |
| c) | January 24, 2005 | g) | March 31, 2005   |
| d) | February 1, 2005 |    |                  |

4. Application Number or Patent Number: 11/021,558

The title of the application is: METHODS FOR THE USE OF ALKOXY-SILANOL PRECURSORS  
FOR VAPOR DEPOSITION OF SiO<sub>2</sub> FILMS

5. Please send all correspondence concerning this document to:

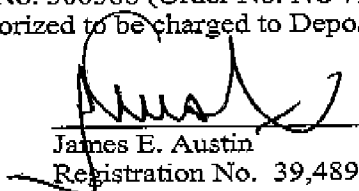
**Beyer Weaver & Thomas, LLP**  
**P.O. Box 70250**  
**Oakland, CA 94612-0250**  
**Customer Number: 022434**

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$40.00

- ☐ Enclosed.  
☒ Charge to Deposit Account No. 500388 (Order No. NOVLP117).  
☒ Any additional fees are authorized to be charged to Deposit Account No. 500388  
(Order No. \_\_\_\_\_).

Date: April 12, 2005

  
James E. Austin

Registration No. 39,489

Total number of pages including this cover sheet, attachments and documents: 13

Attorney Docket No. NOVLP117/NVLS-2977

700170415

(Revised 9/03)

**PATENT****REEL: 016063 FRAME: 0466**

CH \$40.00 500388 11021558

## ASSIGNMENT OF PATENT APPLICATION

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

### METHODS FOR THE USE OF ALKOXYSILANOL PRECURSORS FOR VAPOR DEPOSITION OF $\text{SiO}_2$ FILMS

(Atty. Docket No. NOVLP117/NVLS-2977), (check one)

- ☐ for which I have executed a U.S. patent application on even date herewith. (Accompanying)  
☒ which bears U.S. application No. 11/021,558. (Not accompanying)  
☐ which is a U.S. provisional application. (Accompanying)

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:

- 1) Sell, assign and transfer to **Novellus Systems, Inc.**, a California corporation having a place of business at 3970 North First Street, San Jose, California 95134 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced application.
- 2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any division, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.
- 6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.

Signed on the date indicated beside my signature.

1. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Ron Rulkens

State of California )

ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Ron Rulkens, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

2. Inventor Signature: \_\_\_\_\_

Date: 01/26/05

George D. Papasoulitis

State of California )

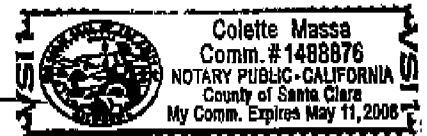
ss.

County of Santa Clara )

On this 26th day of January, in the year 2005, before me, Colette Massa, Notary Public, personally appeared George D. Papasoulitis, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_



3. Inventor Signature: \_\_\_\_\_

Date: 1/24/05

Dennis M. Hausmann

State of California )

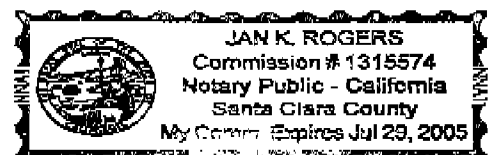
ss.

County of Santa Clara )

On this 24th day of January, in the year 2005, before me, JAN K. ROGERS, Notary Public, personally appeared Dennis M. Hausmann, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_



4. Inventor Signature: *Raihan M. Tarafdar*  
 Raihan M. Tarafdar

Date: 02/01/05

State of California )

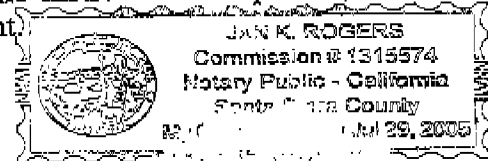
County of SANTA CLARA )

ss.

On this 1<sup>st</sup> day of FEBRUARY, in the year 2005, before me, JAN K. ROGERS, Notary Public, personally appeared Raihan M. Tarafdar, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature *Jan K. Rogers*



5. Inventor Signature: *Bunsen Nie*  
 Bunsen Nie

Date: 2/2/05

State of California )

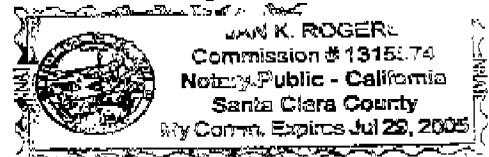
County of SANTA CLARA )

ss.

On this 2<sup>nd</sup> day of FEBRUARY, in the year 2005, before me, JAN K. ROGERS, Notary Public, personally appeared Bunsen Nie, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature *Jan K. Rogers*



6. Inventor Signature: \_\_\_\_\_  
 Adrienne K. Tipton

Date: \_\_\_\_\_

State of California )

County of \_\_\_\_\_ )

ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Adrienne K. Tipton, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

7. Inventor Signature: Jeff TobinDate: 3/21/05

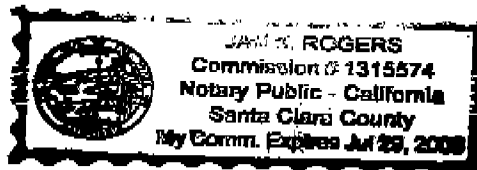
State of California )

County of SANTA CLARA )

ss.

On this 21<sup>st</sup> day of MARCH, in the year 2005, before me,  
JAN K. ROGERS, Notary Public, personally appeared Jeff Tobin, personally known to  
me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed  
to the within instrument, and acknowledged to me that he/she executed the same in his/her  
authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon  
behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature JAN K. ROGERS

**ASSIGNMENT OF PATENT APPLICATION**

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the patent application entitled:

**METHODS FOR THE USE OF ALKOXYSILANOL PRECURSORS FOR VAPOR  
DEPOSITION OF SiO<sub>2</sub> FILMS**

(Atty. Docket No. NOVLP117/NVLS-2977), (check one)

- ☐ for which I have executed a U.S. patent application on even date herewith. (Accompanying)  
☒ which bears U.S. application No. 11/021,558. (Not accompanying)  
☐ which is a U.S. provisional application. (Accompanying)

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:

- 1) Sell, assign and transfer to **Novellus Systems, Inc.**, a California corporation having a place of business at 3970 North First Street, San Jose, California 95134 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced application.
- 2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any division, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.
- 6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.

Signed on the date indicated beside my signature.

1. **Inventor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Ron Rulkens

State of California )

) ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Ron Rulkens, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

2. **Inventor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

George D. Papasouliotis

State of California )

) ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared George D. Papasouliotis, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

3. **Inventor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Dennis M. Hausmann

State of California )

) ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Dennis M. Hausmann, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

4. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Raihan M. Tarafdar

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Raihan M. Tarafdar, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

5. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Bunsen Nie

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Bunsen Nie, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

6. Inventor Signature: \_\_\_\_\_

Date: 2-2-05

Adrianne K. Tipton

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Adrianne K. Tipton, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_



7. Inventor Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Jeff Tobin

State of California )  
County of \_\_\_\_\_ ) ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me,  
\_\_\_\_\_, Notary Public, personally appeared Jeff Tobin, personally known to  
me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed  
to the within instrument, and acknowledged to me that he/she executed the same in his/her  
authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon  
behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

## ASSIGNMENT OF PATENT APPLICATION

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### METHODS FOR THE USE OF ALKOXYSILANOL PRECURSORS FOR VAPOR DEPOSITION OF $\text{SiO}_2$ FILMS

(Atty. Docket No. NOVLP117/NVLS-2977), (check one)

- ☐ for which I have executed a U.S. patent application on even date herewith. (Accompanying)  
☒ which bears U.S. application No. 11/021,558. (Not accompanying)  
☐ which is a U.S. provisional application. (Accompanying)

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- 6) Authorize and request my attorney/agent to insert above the application No. in order to assist with recordal of this assignment.

Signed on the date indicated beside my signature.

1. Inventor Signature: \_\_\_\_\_

Ron Rulkens

Date: \_\_\_\_\_

4/7/05

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Ron Rulkens, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

2. Inventor Signature: \_\_\_\_\_

George D. Papasouliotis

Date: \_\_\_\_\_

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared George D. Papasouliotis, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

3. Inventor Signature: \_\_\_\_\_

Dennis M. Hausmann

Date: \_\_\_\_\_

State of California )

ss. )

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Dennis M. Hausmann, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

4. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Raihan M. Tarafdar

State of California )

ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Raihan M. Tarafdar, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

5. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Bunsen Nie

State of California )

ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Bunsen Nie, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

6. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Adrianne K. Tipton

State of California )

ss.

County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Adrianne K. Tipton, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

7. Inventor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Jeff Tobin

State of California )

) ss.

County of \_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, in the year 2005, before me, \_\_\_\_\_, Notary Public, personally appeared Jeff Tobin, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same in his/her authorized capacity(ies), and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature \_\_\_\_\_

# **BEYER WEAVER & THOMAS, LLP**

INTELLECTUAL PROPERTY LAW  
500 12th Street, Suite 200, Oakland, CA 94607  
Telephone: (510) 663-1100 Facsimile: (510) 663-0920  
www.beyerlaw.com

## **FACSIMILE COVER SHEET**

April 12, 2005

**Receiver:** **Assignment Branch**

**TEL #:** 703-308-9723

**FAX # :** 703-306-5995

**Sender:** James E. Austin  
**Our Ref. No.:** NOVLP117

**Re:** 11/021,558

**Pages Including Cover Sheet(s):** 14

### **MESSAGE:**

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#### **CONFIDENTIALITY NOTE**

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**PATENT**

**RECORDED: 04/13/2005**

**REEL: 016063 FRAME: 0479**