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U.S. DEPARTMENT OF COMMERCE  
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TSM03-0649

To the honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):  
Yuan-Hung Liu Chia-Shiung Tsai  
Chih-Ta Wu  
Yeur-Luen Tu  
Chi-Hsin Lo

2. Name and address of receiving party(ies)  
Name: Taiwan Semiconductor Manufacturing Company, Ltd.

Internal Address: \_\_\_\_\_

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Street Address: No. 6, Li-Hsin Rd. 6

Science-Based Industrial Park

City: Hsin-Chu State: Taiwan Zip: 300-77

Additional name(s) & address(es) attached? ☐ Yes ☒ No

Execution Date: February 5, 2004

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: February 6, 2004

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

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

Name: Steven H. Slater

Slater &amp; Matsil, L.L.P.

Internal Address: \_\_\_\_\_

Street Address: 17950 Preston Rd.

Suite 1000

City: Dallas State: Texas Zip: 75252-5793

6. Total number of applications and patents involved: 1

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

☐ Enclosed☒ Authorized to be charged to deposit account

8. Deposit account number:

50-1065

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9. Statement and signature.

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

Glenn W. Boisbrun, Reg. No. 39,615

Name of Person Signing

Signature

February 10, 2004

Date

Total number of pages including cover sheet, attachments, and documents: 3

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents & Trademarks, Mail Stop: Assignments  
P. O. Box 1450, Alexandria, VA 22313-1450

02/19/2004 DBYRNE 00000049 501065 10775290

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40.00 DA

PATENT  
REEL: 014983 FRAME: 0569

## ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. (TSMC), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 6, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, R.O.C., is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TSMC, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TSMC, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to TSMC, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TSMC, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TSMC, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year:

TITLE OF INVENTION	Spacer for a Split Gate Flash Memory Cell and a Memory Cell Employing the Same			
SIGNATURE OF INVENTOR AND NAME	<input checked="" type="checkbox"/> Yuan-Hung Liu Yuan-Hung Liu	<input checked="" type="checkbox"/> Chih-Ta Wu Chih-Ta Wu	<input checked="" type="checkbox"/> Yeur-Luen Tu Yeur-Luen Tu	<input checked="" type="checkbox"/> Chi-Hsin Lo Chi-Hsin Lo
DATE	<input checked="" type="checkbox"/> 2004.02.05	<input checked="" type="checkbox"/> 2004.02.05	<input checked="" type="checkbox"/> 2004.02.05	<input checked="" type="checkbox"/> 2004.02.05
RESIDENCE (City, County, State)	Hsin-Chu, Taiwan	Hsin-Chu, Taiwan	Taichung, Taiwan	Hsin-Chu, Taiwan

**ASSIGNMENT**

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. (TSMC), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at 121, Park Avenue 3, Science-Based Industrial Park, Hsin-Chu, Taiwan 300, R.O.C., is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TSMC, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof, and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TSMC, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to TSMC, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TSMC, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TSMC, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

TITLE OF INVENTION	<b>Spacer for a Split Gate Flash Memory Cell and a Memory Cell Employing the Same</b>			
SIGNATURE OF INVENTOR AND NAME	<i>Chia Shiong Tsai</i> Chia-Shiung Tsai			
DATE	<i>2004. 02. 05</i>			
RESIDENCE (City, County, State)	Hsin-Chu, Taiwan			