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

1. Name of conveying party(ies):

Chung-Cheng Chou and Cheng-Hung LeeAdditional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other _____

Execution Date: July 25, 2006

2. Name and address of receiving party(ies)

Name: **Taiwan Semiconductor Manufacturing Co., Ltd.**

Internal Address: _____

Street Address: No. 8, Li-Hsin Road 6Science Based Industrial ParkCity: Hsin-Chu State: Taiwan Zip: 300-77

Additional name(s) & address(es) attached?

☐ Yes ☒ No113260 U.S. PTO
11/493405

072606

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: July 26, 2006

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: Howard Chen, Esq.

Internal Address: _____

Street Address: Preston Gates & Ellis LLP55 Second Street, Suite 1700City: San Francisco State: CA Zip: 941056. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41)\$ 40.00☒ Enclosed

Authorized to be charged to deposit account

8. Deposit account number:

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9. Signature:

Ting-Mao Chao, Esq.,
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Name of Person Signing

Signature

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

Mail documents to be recorded with required cover sheet information to:
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PATENT**REEL: 018100 FRAME: 0228**

ASSIGNMENT AND AGREEMENT

For value received, I/we **Chung-Cheng Chou and Cheng-Hung Lee**, hereby sell, assign and transfer to **Taiwan Semiconductor Manufacturing Co., Ltd.**, with its principal place of business located at No. 8, Li-Hsin Road 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, Republic of China, and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to **MEMORY MACRO WITH IRREGULAR EDGE CELLS** described in an application for Letters Patent of the United States filed on July 26, 2006 and all the rights and privileges in said application and under any and all Letters Patent and any divisions, continuations, continuations-in-part, reexamination certificates, reissues, and extensions thereof that may be granted in the United States for said inventions; and I/we also concurrently hereby sell, assign and transfer to **Taiwan Semiconductor Manufacturing Co., Ltd.** the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

I/We authorize **Taiwan Semiconductor Manufacturing Co., Ltd.** to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from me/us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

I/We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of **Taiwan Semiconductor Manufacturing Co., Ltd.** to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

I/We request that any and all patents for said inventions be issued to **Taiwan Semiconductor Manufacturing Co., Ltd.** in the United States and in all countries foreign to the United States, or to such nominees as **Taiwan Semiconductor Manufacturing Co., Ltd.** may designate.

I/We agree that, when requested, I/we shall, without charge to Taiwan Semiconductor Manufacturing Co., Ltd. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Inventor No. 1:

Dated: July 25, 2006Chung-Cheng Chou
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Dated: July 25 2006Cheng-Hung Lee
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