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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):

- 1) Yi-Shing Chang
- 2) Wen-Ting Chu

7.11.03

2. Name and address of receiving party(ies)

Name: Taiwan Semiconductor Manufacturing Co., Ltd.

Internal Address: _____

Street Address: No. 8, Li-Hsin Road 6,

Science Based Industrial Park

City: Hsin-Chu State: _____ Zip: _____

Country: Taiwan 300-77, R.O.C.

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

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

3. Nature of conveyance:

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

Execution Date: 07/3/2003

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

10617470

If this document is being filed together with a new application, the execution date of the application is: 07/03/2003

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: William H. Murray, Esquire

Internal Address: Duane Morris LLP

Street Address: One Liberty Place

City: Philadelphia State: PA Zip: 19103

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: _____

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9. Signature.

William H. Murray, Esquire
Name of Person Signing

Signature

July 10, 2003
Date

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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10/617470
07/11/03

PATENT
REEL: 014273 FRAME: 0073

EXPRESS MAIL NO. EV175965797US

ATTORNEY DOCKET NO.: N1085-00152
[TSMC 2003-0034]**ASSIGNMENT AND AGREEMENT**

For value received, we, **Yi-Shing Chang and Wen-Ting Chu**, 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 **METHOD AND SYSTEM FOR FORMING SOURCE REGIONS IN MEMORY DEVICES** described in an application for Letters Patent of the United States executed on even date herewith, 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 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.

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 us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

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.

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.

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[TSMC 2003-0034]

We agree that, when requested, 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.

Dated: ✓ 7/3

✓ Yi-Shing Chang
Yi-Shing Chang

Residence: ✓ #43, 97, Jian-Zhong Rd, Hsin-Chu, Taiwan. R.O.C.

Dated: ✓ 7/3

✓ Wen-Ting Chu
Wen-Ting Chu

Residence: ✓ #668, Chung-cheng Rd. Allen, country, Kaohsiung, Taiwan. R.O.C.

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