

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
Ming-Huei Shen	04/27/2010
Shih-Chang Liu	04/27/2010
Chia-Shiung Tsai	04/27/2010
RECEIVING PARTY DATA	
Name:	Taiwan Semiconductor Manufacturing Company, Ltd.
Street Address:	No. 8, Li-Hsin Road 6
City:	Hsin-Chu
State/Country:	TAIWAN
Postal Code:	300-77
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	12770344
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Total Attachments: 2
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PATENT
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Docket No.: 2009-0718 / 24061.1447
Customer No.: 42717

ASSIGNMENT

WHEREAS, we,

- | | | | |
|-----|------------------|----|--|
| (1) | Ming-Huei Shen | of | No. 41-8, Wen-an Road
Dounan Town, Yunlin County 630, Taiwan, R.O.C. |
| (2) | Shih-Chang Liu | of | No. 21-1, Yuku Village
Alian Township, Kaohsiung County 822, Taiwan, R.O.C. |
| (3) | Chia-Shiung Tsai | of | No. 5, 50 Alley, 62 Lane, Gua-Tsuey Road
Hsin-Chu Taiwan, R.O.C. |

have invented certain improvements in

PHASE CHANGE MEMORY DEVICE WITH AIR GAP

for which we have executed an application for Letters Patent of the United States of America,

 X of even date filed herewith; and
 filed on 04-29-2010 and assigned application number 12/770,344; and

WHEREAS, we authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd., ("TSMC"), No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park Hsin-Chu, Taiwan 300-77, Republic of China. is desirous of obtaining the entire right, title, and interest in, to and under the said invention and the said application in the United States of America and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said invention to the said TSMC, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

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AND WE HEREBY further covenant and agree that we will communicate to said TSMC, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name: Ming-Huei Shen

Residence Address: No. 41-8, Wen-an Road
Dounan Town, Yunlin County 630, Taiwan, R.O.C.

Dated: 2010.04.27.

Ming Huei Shen
Inventor Signature

Inventor Name: Shih-Chang Liu

Residence Address: No. 21-1, Yuku Village
Alian Township, Kaohsiung County 822

Dated: 2010.04.27

Shih-Chang Liu
Inventor Signature

Inventor Name: Chia-Shiung Tsai

Residence Address: No. 5, 50 Alley, 62 Lane, Gua-Tsuey Road
Hsin-Chu, Taiwan, R.O.C.

Dated: 2010, 04, 27

Chia Shiung Tsai
Inventor Signature