

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	ASSIGNMENT												
CONVEYING PARTY DATA													
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Tsun-Kai Tsao</td> <td>08/17/2011</td> </tr> <tr> <td>Ming-Huei Shen</td> <td>08/17/2011</td> </tr> <tr> <td>Shih-Chang Liu</td> <td>08/17/2011</td> </tr> <tr> <td>Yeur-Luen Tu</td> <td>08/17/2011</td> </tr> <tr> <td>Chia-Shiung Tsai</td> <td>08/17/2011</td> </tr> </tbody> </table>		Name	Execution Date	Tsun-Kai Tsao	08/17/2011	Ming-Huei Shen	08/17/2011	Shih-Chang Liu	08/17/2011	Yeur-Luen Tu	08/17/2011	Chia-Shiung Tsai	08/17/2011
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Chia-Shiung Tsai	08/17/2011												
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													
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13216369</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13216369								
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CORRESPONDENCE DATA													
Fax Number:	(214)200-0853												
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>													
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ATTORNEY DOCKET NUMBER:	24061.1790												
NAME OF SUBMITTER:	Rachel L.I. Davis												
Total Attachments: 3 source=1790_Assignment#page1.tif source=1790_Assignment#page2.tif source=1790_Assignment#page3.tif													

OP \$40.00 13216369

Docket No.: 2011-0167 / 24061.1790
 Customer No.: 42717

ASSIGNMENT

WHEREAS, we,

- (1) Tsun-Kai Tsao of No. 1, Alley 61, Lane 51, Fuhua 8th Street
Yongkang City, Tainan County 71068, Taiwan, R.O.C.
- (2) Ming-Huei Shen of No. 41-8, Wen-An Road
Dounan Town, Yunlin County 630, Taiwan, R.O.C.
- (3) Shih-Chang Liu of No. 21-1, Yuku Village
Alian Township, Kaohsiung County 822, Taiwan, R.O.C.
- (4) Yeur-Luen Tu of No. 3-6, Lane 12, Gong-Xue Road
Taichung, Taiwan, R.O.C.
- (5) 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 AND METHOD OF FABRICATING SAME

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

 of even date filed herewith; and
 X filed on 8-24-2011 and assigned application no. 13/216,369 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.

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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.

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: Tsun-Kai Tsao

Residence Address: No. 1, Alley 61, Lane 51, Fuhua 8th Street
 Yongkang City, Tainan County 71068, Taiwan, R.O.C.

Dated: 2011/8/17

Tsun Kai Tsao
 Inventor Signature

Inventor Name: Ming-Huei Shen

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

Dated: 2011.08.17.

Ming-Huei Shen
 Inventor Signature

Inventor Name: Shih-Chang Liu

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

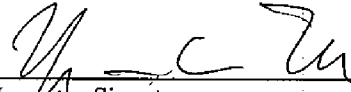
Dated: Shih-Chang Liu
 2011.08.17

Shih-Chang Liu
 Inventor Signature

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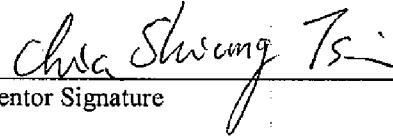
Inventor Name: Yeur-Luen Tu
Residence Address: No. 3-6, Lane 12, Gong-Xue Road
Taichung, Taiwan, R.O.C.

Dated: 2011/2/17


Inventor Signature

Inventor Name: Chia-Shiung Tsai
Residence Address: No. 5, 50 Alley, 62 Lane, Gua-Tsuey Road
Hsin-Chu City, Taiwan, R.O.C.

Dated: 2011/8/17


Inventor Signature