

## 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>Hung-Ming Chen</td> <td>09/01/2011</td> </tr> <tr> <td>Chih-Hao Chang</td> <td>09/01/2011</td> </tr> <tr> <td>Chih-Hao Yu</td> <td>09/01/2011</td> </tr> </tbody> </table>		Name	Execution Date	Hung-Ming Chen	09/01/2011	Chih-Hao Chang	09/01/2011	Chih-Hao Yu	09/01/2011				
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<table border="1"> <tr> <td>Name:</td> <td>Taiwan Semiconductor Manufacturing Company, Ltd.</td> </tr> <tr> <td>Street Address:</td> <td>No. 8, Li-Hsin Rd. 6</td> </tr> <tr> <td>Internal Address:</td> <td>Science-Based Industrial Park</td> </tr> <tr> <td>City:</td> <td>Hsin-Chu</td> </tr> <tr> <td>State/Country:</td> <td>TAIWAN</td> </tr> <tr> <td>Postal Code:</td> <td>300-77</td> </tr> </table>		Name:	Taiwan Semiconductor Manufacturing Company, Ltd.	Street Address:	No. 8, Li-Hsin Rd. 6	Internal Address:	Science-Based Industrial Park	City:	Hsin-Chu	State/Country:	TAIWAN	Postal Code:	300-77
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CORRESPONDENCE DATA													
<p>Fax Number: 2142000853  <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 214-651-5000        Email: ipdocketing@haynesboone.com</p> <p>Correspondent Name: Haynes and Boone, LLP.        Address Line 1: 2323 Victory Avenue        Address Line 2: Suite 700        Address Line 4: Dallas, TEXAS 75219</p>													
ATTORNEY DOCKET NUMBER:	2011-0631 / 24061.2545												
NAME OF SUBMITTER:	Scott T. Jarratt												
Signature:	/Scott T. Jarratt/												

PATENT

Date:

06/17/2013

Total Attachments: 2

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### ASSIGNMENT

WHEREAS, we,

- |     |                |    |   |
|-----|----------------|----|---|
| (1) | Hung-Ming Chen | of | 2F, No. 13, Jinshan 23rd Street, East District<br>Hsinchu City 300, Taiwan, R.O.C.        |
| (2) | Chih-Hao Chang | of | 10F, No. 128, Section 2, Sheng-Li 7th Street<br>Chu-Bei City, Hsin-Chu, Taiwan, R.O.C.    |
| (3) | Chih-Hao Yu    | of | No. 34, Neighborhood 9, Lutian Village, Nanxi District<br>Tainan City 715, Taiwan, R.O.C. |

have invented certain improvements in

### IMPROVED SILICIDE FORMATION AND ASSOCIATED DEVICES

for which we have filed and executed an application for Letters Patent of the United States of America on September 8, 2011, as U.S. Serial No. 13/227,979; 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 One Dollar (\$1.00) and other 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.

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: Hung-Ming Chen

Residence Address: 2F, No. 13, Jinshan 23rd Street, East District  
Hsinchu City 300, Taiwan, R.O.C.

Dated: ✓ Hung-Ming Chen

✓ 2011. 09. 07  
Inventor Signature

Inventor Name: Chih-Hao Chang

Residence Address: 10F, No. 128, Section 2, Sheng-Li 7th Street  
Chu-Bei City, Hsin-Chu, Taiwan, R.O.C.

Dated: ✓ Chih-Hao Chang

✓ 2011. 09. 01  
Inventor Signature

Inventor Name: Chih-Hao Yu

Residence Address: No. 34, Neighborhood 9, Lutian Village, Nanxi District  
Tainan City 715, Taiwan, R.O.C.

Dated: ✓ Chih-Hao Yu

✓ 2011. 09. 01  
Inventor Signature