

## 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>Chih-Ming Lai</td> <td>01/13/2013</td> </tr> <tr> <td>Ken-Hsien Hsieh</td> <td>01/11/2013</td> </tr> <tr> <td>Wen-Chun Huang</td> <td>01/11/2013</td> </tr> <tr> <td>Ru-Gun Liu</td> <td>01/21/2013</td> </tr> </tbody> </table>		Name	Execution Date	Chih-Ming Lai	01/13/2013	Ken-Hsien Hsieh	01/11/2013	Wen-Chun Huang	01/11/2013	Ru-Gun Liu	01/21/2013		
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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        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:	2012-0459 / 24061.2202												
NAME OF SUBMITTER:	Kyle L. Howard												
<p>Total Attachments: 3        source=24061-2202_Assignment#page1.tif        source=24061-2202_Assignment#page2.tif        source=24061-2202_Assignment#page3.tif</p>													

OP \$40.00 13732855

**ASSIGNMENT**

WHEREAS, we,

- |     |                 |    |   |
|-----|-----------------|----|---|
| (1) | Chih-Ming Lai   | of | 3F., No.2, Lane 15, Peiying Street<br>Hsinchu City 300, Taiwan R.O.C.                   |
| (2) | Ken-Hsien Hsieh | of | 5F., No. 49, Sec. 2, Roosevelt Road<br>Da-an District<br>Taipei City 106, Taiwan R.O.C. |
| (3) | Wen-Chun Huang  | of | No. 58, Zhong-Shan Road, Xi-Gang<br>Xi-Gang District<br>Tainan City, Taiwan 723, R.O.C. |
| (4) | Ru-Gun Liu      | of | No.90, Chenggong 5th Street<br>Zhubei City, Hsinchu County 302,<br>Taiwan R.O.C.        |

have invented certain improvements in

**METHOD OF DECOMPOSABLE CHECKING APPROACH FOR MASK ALIGNMENT  
IN MULTIPLE PATTERNING**

for which we have filed an application for Letters Patent of the United States of America on January 2, 2013, as U.S. Serial No. 13/732,855; 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.

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.

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Inventor Name: Chih-Ming Lai

Residence Address: 3F., No.2, Lane 15, Peiying St., Hsinchu City 300, Taiwan R.O.C.

Dated: 2013.01.13

Chih-Ming Lai  
Inventor Signature

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Inventor Name: Ken-Hsien Hsieh

Residence Address: 5F., No. 49, Sec. 2, Roosevelt Road, Da-an District  
Taipei City 106, Taiwan R.O.C.

Dated: 2013.01.11

Ken-Hsien Hsieh  
Inventor Signature

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Inventor Name: Wen-Chun Huang

Residence Address: No. 58, Zhong-Shan Road, Xi-Gang, Xi-Gang District  
Tainan City, Taiwan 723, R.O.C

Dated: 2013.01.11

Wen-Chun Huang  
Inventor Signature

Docket No.: 2012-0459/24061.2202  
Customer No.: 000042717

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Inventor Name: Ru-Gun Liu

Residence Address: No.90, Chenggong 5th Street  
Zhubei City, Hsinchu County 302, Taiwan R.O.C.

Dated: Jan. 21. 2013

Ru-Gun Liu  
Inventor Signature

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