

## 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>Chen-Hua Yu</td> <td>06/25/2012</td> </tr> <tr> <td>Jaw-Jung Shin</td> <td>06/25/2012</td> </tr> <tr> <td>Shy-Jay Lin</td> <td>06/25/2012</td> </tr> <tr> <td>Burn Jeng Lin</td> <td>06/25/2012</td> </tr> </tbody> </table>		Name	Execution Date	Chen-Hua Yu	06/25/2012	Jaw-Jung Shin	06/25/2012	Shy-Jay Lin	06/25/2012	Burn Jeng Lin	06/25/2012		
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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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Application Number:	13484588												
CORRESPONDENCE DATA													
Fax Number:	2142000853												
Phone:	214-651-5000												
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<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>													
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Address Line 4:	Dallas, TEXAS 75219												
ATTORNEY DOCKET NUMBER:	24061.2021/2011-1249												
NAME OF SUBMITTER:	David M. O'Dell												
Total Attachments: 3 source=2021Assignment#page1.tif source=2021Assignment#page2.tif source=2021Assignment#page3.tif													

OP \$40.00 13484588

PATENT

Docket No.: 2011-1249 / 24061.2021  
Customer No.: 42717

### ASSIGNMENT

WHEREAS, we,

- |     |               |    |  |
|-----|---------------|----|--|
| (1) | Chen-Hua Yu   | of | No. 3, 38 Waterfront Road 2<br>Hsinchu City, Taiwan, R.O.C.  |
| (2) | Jaw-Jung Shin | of | 10F., No.72-11, Lane 531, Section 1, Guangfu Road<br>East District, Hsinchu City 300, Taiwan, R.O.C. |
| (3) | Shy-Jay Lin   | of | No.15, Alley 36, Lane 134, Yuanshan Road<br>Jhudong Township, Hsinchu County 310<br>Taiwan, R.O.C.   |
| (4) | Burn Jeng Lin | of | 153 Guang Fu Road, Section 1, Lane 89, 1 <sup>st</sup> Floor<br>Hsinchu City, Taiwan, R.O.C.         |

have invented certain improvements in

### DEVICES AND METHODS FOR IMPROVED REFLECTIVE ELECTRON BEAM LITHOGRAPHY

for which we filed an application for Letters Patent of the United States of America on May 31, 2012, as U.S. Serial No. 13/484,588; 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.

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Inventor Name: Chen-Hua Yu

Residence Address: No. 3, 38 Waterfront Road 2  
Hsinchu City, Taiwan, R.O.C.

Dated: 6/25/12


  
Inventor Signature

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Inventor Name: Jaw-Jung Shin

Residence Address: 10F., No.72-11, Lane 531, Section 1, Guangfu Road  
East District, Hsinchu City 300, Taiwan, R.O.C.

Dated: 6/25/2012

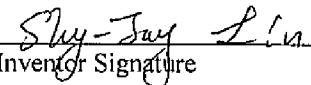
  
Inventor Signature

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Inventor Name: Shy-Jay Lin

Residence Address: No.15, Alley 36, Lane 134, Yuanshan Road  
Jhudong Township, Hsinchu County 310, Taiwan, R.O.C.

Dated: June 25 2012

  
Inventor Signature

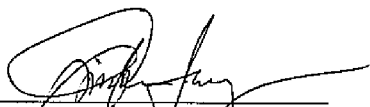
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Inventor Name: Burn Jeng Lin

Residence Address: 153 Guang Fu Road, Section 1, Lane 89, 1<sup>st</sup> Floor  
Hsinchu City, Taiwan, R.O.C.

Dated:

  
June 25, 2012

Inventor Signature

