

## 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>Allen Timothy Chang</td> <td>04/15/2013</td> </tr> <tr> <td>Yi-Hsien Chang</td> <td>04/15/2013</td> </tr> <tr> <td>Chun-Ren Cheng</td> <td>04/15/2013</td> </tr> </tbody> </table>		Name	Execution Date	Allen Timothy Chang	04/15/2013	Yi-Hsien Chang	04/15/2013	Chun-Ren Cheng	04/15/2013				
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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													
Fax Number: <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 214-651-5000 Email: ipdocketing@haynesboone.com Correspondent Name: Haynes and Boone, LLP Address Line 1: 2323 Victory Avenue Suite 700 Address Line 4: Dallas, TEXAS 75219													
ATTORNEY DOCKET NUMBER:	2012-1121/24061.2352												
NAME OF SUBMITTER:	Scott Matthews												
Signature:	/sm82918/												

Date:

05/31/2013

Total Attachments: 2

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### ASSIGNMENT

WHEREAS, we,

- |     |                     |    |   |
|-----|---------------------|----|---|
| (1) | Allen Timothy Chang | of | Room 202, 42 Minyou St.<br>Hsinchu, TAIWAN 30073  |
| (2) | Yi-Hsien Chang      | of | No. 28, Aly. 119, Ln. 247, Sec. 2 Yuanji Rd.<br>Shetou Township, Changhua County 511,<br>TAIWAN |
| (3) | Chun-Ren Cheng      | of | 8F-2, 123-1, 89 Alley, Kuang-Fu Road<br>Hsin-Chu City, TAIWAN                                   |

have invented certain improvements in

### OPTICAL DETECTION FOR BIO-ENTITIES

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 3/14/2013 and assigned application number 13/830,234; 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.

Inventor Name: Allen Timothy Chang

Residence Address: Room 202, 42 Minyou St.  
Hsinchu, TAIWAN 30073

Dated: 2013/04/15  
2013/04/15  
Allen Timothy Chang

Allen Timothy Chang  
Inventor Signature

Inventor Name: Yi-Hsien Chang

Residence Address: No. 28, Aly. 119, Ln. 247, Sec. 2 Yuanji Rd.  
Shetou Township, Changhua County 511, TAIWAN

Dated: 2013, 04, 15.

Yi Hsien Chang  
Inventor Signature

Inventor Name: Chun-Ren Cheng

Residence Address: 8F-2, 123-1, 89 Alley, Kuang-Fu Road  
Hsin-Chu City, TAIWAN

Dated: 2013, 04, 15

Chun-Ren Cheng  
Inventor Signature