

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MING-ZHANG KUO	05/29/2013
PING-LIN YANG	05/29/2013
CHENG-CHUNG LIN	05/29/2013
OSAMU TAKAHASHI	05/28/2013
SANG HOO DHONG	05/29/2013
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.
<b>Street Address:</b>	NO. 8, LI-HSIN RD. 6
<b>Internal Address:</b>	SCIENCE-BASED INDUSTRIAL PARK
<b>City:</b>	HSIN-CHU
<b>State/Country:</b>	TAIWAN
<b>Postal Code:</b>	300-77
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14604488
<b>CORRESPONDENCE DATA</b>	
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<b>ATTORNEY DOCKET NUMBER:</b>	20130094 / 24061.2518US02
<b>NAME OF SUBMITTER:</b>	JANIE MARTINEZ-HOLM
<b>SIGNATURE:</b>	/Janie Martinez-Holm/
<b>DATE SIGNED:</b>	01/23/2015

**Total Attachments: 3**

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**ASSIGNMENT**

WHEREAS, we,

- (1) Ming-Zhang Kuo of 8F., No. 1, Lane 131, Wenshan Road  
Qionglin Township, Hsinchu County 307, Taiwan R.O.C.
- (2) Ping-Lin Yang of No. 551, Xinggong Road  
Tianzhong Township, Changhua County, 52048, Taiwan R.O.C.
- (3) Cheng-Chung Lin of 6F., No.7, Lane 28, Section 1, Tiedao Road  
East District, Hsinchu City 300, Taiwan R.O.C.
- (4) Osamu Takahashi of 2506 Field Lark Drive  
Round Rock, Texas 78681-2725
- (5) Sang Hoo Dhong of JinSan North 1st Street #7 Room 606  
Hsin-Chu City, Taiwan R.O.C.

have invented certain improvements in

**ELECTRON BEAM LITHOGRAPHY SYSTEMS AND METHODS INCLUDING  
TIME DIVISION MULTIPLEX LOADING**

for which we have executed an application for Letters Patent of the United States of America, filed on June 10, 2013 and assigned application number 13/914,118; and

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: Ming-Zhang Kuo

Residence Address: 8F., No. 1, Lane 131, Wenshan Road  
Qionglin Township, Hsinchu County 307, Taiwan R.O.C.

Dated: ✓ 2013. 5. 29

✓ Ming-Zhang Kuo  
Inventor Signature

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Inventor Name: Ping-Lin Yang

Residence Address: No. 551, Xingong Road  
Tianzhong Township, Changhua County, 52048, Taiwan R.O.C.

Dated: ✓ 2013. 5. 29

✓ [Signature]  
Inventor Signature

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Inventor Name: Cheng-Chung Lin

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Dated: ✓ 2013. 5. 29

✓ Cheng-Chung Lin  
Inventor Signature

Docket No.: 2013-0094 / 24061.2518

Customer No.: 42717

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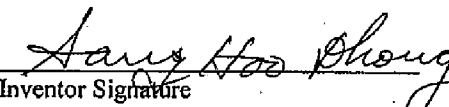
Dated: May 28, 2013

  
Inventor Signature

Inventor Name: Sang Hoo Dhong

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Dated: May 29 2013

  
Inventor Signature