

<b>PATENT ASSIGNMENT COVER SHEET</b>
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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>
PEI-CHENG HSU	08/23/2016
CHIH-CHENG LIN	08/23/2016
TA-CHENG LIEN	08/23/2016
WEI-SHIUAN CHEN	08/23/2016
HSIN-CHANG LEE	08/23/2016
ANTHONY YEN	08/23/2016
<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>
<b>Application Number:</b>	15395784
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(214)200-0853
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<b>ATTORNEY DOCKET NUMBER:</b>	20141116/24061.3031US02
<b>NAME OF SUBMITTER:</b>	DAVID M. O'DELL
<b>SIGNATURE:</b>	/DAVID M. O'DELL/
<b>DATE SIGNED:</b>	09/25/2017

PATENT

**Total Attachments: 3**

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**ASSIGNMENT**

WHEREAS, we,

- 1) Pei-Cheng Hsu of No. 23, Alley 12, Lane 63, Wu-Cheng Street, Taipei, Taiwan
- 2) Chih-Cheng Lin of No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77
- 3) Ta-Cheng Lien of No.187, Wunchang St., Cyonglin Township, Hsinchu County 307, Taiwan\
- 4) Wei-Shiuan Chen of No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77
- 5) Hsin-Chang Lee of 3F., No.26, Ln. 394, Xianzheng 2nd Rd., Zhubei City, Hsinchu County 302
- 6) Anthony Yen of 20F-9, 188 Guanxin Road, Hsinchu 300, Taiwan

have invented certain improvements in

**TREATING A CAPPING LAYER OF A MASK**

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 December 24, 2014 and assigned application number 14/582,459; 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

Docket No.: P20141116US00 - 24061.3031  
Customer No.: 42717

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: Pei-Cheng Hsu

Residence Address: No. 23, Alley 12, Lane 63, Wu-Cheng Street, Taipei, Taiwan

Dated: 2016. 8. 23

Pei-Cheng Hsu  
Inventor Signature

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Inventor Name: Chih-Cheng Lin

Residence Address:

Dated: 8/23 2016

Chih-Cheng Lin  
Inventor Signature

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Inventor Name: Ta-Cheng Lien

Residence Address: No.187, Wunchang St., Cyonglin Township, Hsinchu County 307, Taiwan

Dated: 2016. 8. 23

Ta-Cheng Lien  
Inventor Signature

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Docket No.: P20141116US00 - 24061.3031  
Customer No.: 42717

Inventor Name: Wei-Shiuan Chen

Residence Address:

Dated: 2016.8.23

Wei-Shiuan Chen  
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Dated: 2016.8.23

Hsin-Chang Lee  
Inventor Signature

Inventor Name: Anthony Yen

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Dated: 8/23/16

[Signature]  
Inventor Signature