

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4473280

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DE-WEI YU	09/30/2016
CHIA PING LO	10/18/2016
LIANG-GI YAO	10/18/2016
WENG CHANG	10/03/2016
YEE-CHIA YEO	10/03/2016
ZIWEI FANG	09/30/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTURE MANUFACTURING CO., 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>	15282981
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(214)200-0853
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	214-651-5000
<b>Email:</b>	ipdocketing@haynesboone.com
<b>Correspondent Name:</b>	HAYNES AND BOONE, LLP IP SECTION
<b>Address Line 1:</b>	2323 VICTORY AVENUE
<b>Address Line 2:</b>	SUITE 700
<b>Address Line 4:</b>	DALLAS, TEXAS 75219
<b>ATTORNEY DOCKET NUMBER:</b>	20151393/24061-3344US01
<b>NAME OF SUBMITTER:</b>	JO EL MERCER
<b>SIGNATURE:</b>	/Jo El Mercer/
<b>DATE SIGNED:</b>	06/22/2017

PATENT

**Total Attachments: 5**

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## ASSIGNMENT

WHEREAS, we,

- |     |              |    |                                 |
|-----|--------------|----|---------------------------------|
| (1) | De-Wei Yu    | of | Taiwan, Taiwan (R.O.C.)         |
| (2) | Chia Ping Lo | of | Hsinchu County, Taiwan (R.O.C.) |
| (3) | Liang-Gi Yao | of | Shin Chu, Taiwan (R.O.C.)       |
| (4) | Weng Chang   | of | Hsin-Chu, Taiwan (R.O.C.)       |
| (5) | Yee-Chia Yeo | of | Hsinchu City, Taiwan (R.O.C.)   |
| (6) | Ziwei Fang   | of | Hsinchu, Taiwan (R.O.C.)        |

have invented certain improvements in

### METHOD OF SEMICONDUCTOR INTEGRATED CIRCUIT FABRICATION

for which we have executed an application for Letters Patent of the United States of America,

  X   of even date filed herewith; and

           filed on                    and assigned application number                   ; 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 Co., 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: De-Wei Yu

Residence Address: 6F-2, No. 322, Bo-Ai Rd, Ping-Tung, Taiwan 900 (R.O.C.)

Dated: 9/30/2016

De-Wei Yu  
Inventor Signature

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Inventor Name: Chia Ping Lo

Residence Address: No.178, Sianjheng 1<sup>st</sup> St., Jhubei City, Hsinchu County 302,  
Taiwan (R.O.C.)

Dated: \_\_\_\_\_

\_\_\_\_\_  
Inventor Signature

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Inventor Name: Liang-Gi Yao

Residence Address: 5F No.12 Lane 53, Shin Juang Street, Shin Chu 300, Taiwan (R.O.C.)

Dated: \_\_\_\_\_

\_\_\_\_\_  
Inventor Signature

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Inventor Name: De-Wei Yu

Residence Address: 6F-2, No. 322, Bo-Ai Rd, Ping-Tung, Taiwan 900 (R.O.C.)

Dated: \_\_\_\_\_

\_\_\_\_\_  
Inventor Signature

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Inventor Name: Chia Ping Lo

Residence Address: No.178, Sianjheng 1<sup>st</sup> St., Jhubei City, Hsinchu County 302,  
Taiwan (R.O.C.)

Dated: 2016/10/18  
Chia Ping Lo

Chia Ping Lo  
Inventor Signature

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Inventor Name: Liang-Gi Yao

Residence Address: 5F No.12 Lane 53, Shin Juang Street, Shin Chu 300, Taiwan (R.O.C.)

Dated: \_\_\_\_\_

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Inventor Signature

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Inventor Name: Weng Chang

Residence Address: N0.20-6F, Lane 79, Hsin-Juang Street, Hsin-Chu 300, Taiwan, (R.O.C.)

Dated: 10/3/2016

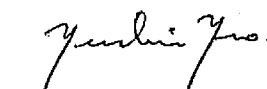
  
Inventor Signature

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Inventor Name: Yee-Chia Yeo

Residence Address: 50 Daxue Road, 7 Floor, Apartment 2, Hsinchu City, Taiwan (R.O.C.)

Dated: Oct. 3, 2016.

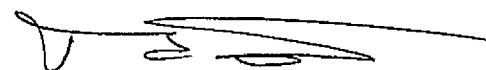
  
Inventor Signature

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Inventor Name: Ziwei Fang

Residence Address: 9 Songcui Road, 17th Lane, Baoshan Township, Hsinchu,  
Taiwan (R.O.C.)

Dated: 9/30/2016

  
Inventor Signature

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Inventor Name: De-Wei Yu

Residence Address: 6F-2, No. 322, Bo-Ai Rd, Ping-Tung, Taiwan 900 (R.O.C.)

Dated: \_\_\_\_\_

\_\_\_\_\_  
Inventor Signature

Inventor Name: Chia Ping Lo

Residence Address: No.178, Sianjheng 1<sup>st</sup> St., Jhubei City, Hsinchu County 302,  
Taiwan (R.O.C.)

Dated: \_\_\_\_\_

\_\_\_\_\_  
Inventor Signature

Inventor Name: Liang-Gi Yao

Residence Address: 5F No.12 Lane 53, Shin Juang Street, Shin Chu 300, Taiwan (R.O.C.)

✓  
Dated: 10/18/2016

✓  
Liang-Gi Yao  
\_\_\_\_\_  
Inventor Signature