PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT4472969

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ALI KESHAVARZI	07/27/2016
SHU-HUI SUNG	04/17/2016
TA-PEN GUO	03/20/2017
HSIANG-JEN TSENG	01/23/2017
SHYUE-SHYH LIN	05/19/2016
LEE-CHUNG LU	03/17/2017
CHUNG-CHENG WU	03/23/2017
LI-CHUN TIEN	01/23/2017
JUNG-CHAN YANG	01/20/2017
TING YU CHEN	03/16/2017
MIN CAO	05/19/2016
YUNG-CHIN HOU	05/20/2017

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., 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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15094697

CORRESPONDENCE DATA

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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.

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ATTORNEY DOCKET NUMBER:	20110292/24061-3305US02
NAME OF SUBMITTER:	JO EL MERCER
SIGNATURE:	/Jo El Mercer/
DATE SIGNED:	06/22/2017

Total Attachments: 8
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ASSIGNMENT

WHEREAS, we,

(1)	**Ali Keshavarzi**	of	Los Altos Hills, CA
(2)	**Shu-Hui Sung**	of	Baoshan Township, Taiwan (R.O.C.)
(3)	**Ta-Pen Guo**	of	Taipei City, Taiwan (R.O.C.)
(4)	**Hsiang-Jen Tseng**	of	Hsinchu City, Taiwan (R.O.C.)
(5)	**Shyue-Shyh Lin**	of	Hsinchu County, Taiwan (R.O.C.)
(6)	**Lee-Chung Lu**	of	Taipei, Taiwan (R.O.C.)
(7)	**Chung-Cheng Wu**	of	Hsin-Chu County, Taiwan (R.O.C.)
(8)	**Li-Chun Tien**	of	Taiwan, Taiwan (R.O.C.)
(9)	**Jung-Chan Yang**	of	Taoyuan County, Taiwan (R.O.C.)
(10)	**Ting Yu Chen**	of	Hsinchu City, Taiwan (R.O.C.)
(11)	**Min Cao**	of	Hsinchu, Taiwan (R.O.C.)
(12)	**Yung-Chin Hou**	of	Taipei, Taiwan (R.O.C.)

have invented certain improvements in

INTEGRATED CIRCUITS AND MANUFACTURING METHODS THEREOF

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.

Inventor Name: Ali Keshavarzi

Residence Address: 10971 Terry Way, Los Altos Hills, CA 94024

Dated: July 27, 2016

Inventor Signature

Inventor Name: Shu-Hui Sung

Residence Address: 5 Ln 160, Edison Rd, Baoshan Township, Hsinchu County,
30844, Taiwan (R.O.C.)

Dated:

Inventor Signature

Inventor Name: Ta-Pen Guo

Residence Address: No.18, Ln. 21, Dahu Shanzhuang St., Neihu Dist., Taipei City 114,
Taiwan (R.O.C.)

Dated:

Inventor Signature

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the said TSMC, its successors, legal representatives, and assigns, the entire right, title, an 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 o America which may be granted thereon and all reissues and extensions thereof, and al applications for Letters Patent which may be filed for said invention in any country or countrie foreign to the United States of America, and all extensions, renewals, and reissues thereof, and al prior patents and patent applications from which a filing priority of the above-described paten application may be obtained, including the right to collect past damages; and we hereby authoriz and request the Commissioner of Patents of the United States of America, and any official of an country or countries foreign to the United States of America, whose duty it is to issue patents o applications as aforesaid, to issue all Letters Patent for said invention to the said TSMC, it successors, legal representatives and assigns, in accordance with the terms of this instrument.

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Inventor Name: Ali Keshavarzi

Residence Address: 10971 Terry Way, Los Altos Hills, CA 94024

Dated: ____________________

____
Inventor Signature

Inventor Name: Shu-Hui Sung

Residence Address: 5 Ln 160, Edison Rd, Baoshan Township, Hsinchu County,
30844, Taiwan (R.O.C.)

Dated: 4-17-2016

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Inventor Signature

Inventor Name: Ta-Pen Guo

Residence Address: No.18, Ln. 21, Dahu Shanzhuang St., Neihu Dist., Taipei City 114,
Taiwan (R.O.C.)

Dated: ____________________

____
Inventor Signature

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: Ali Keshavarzi

Residence Address: 10971 Terry Way, Los Altos Hills, CA 94024

Dated:____________________

____
Inventor Signature

Inventor Name: Shu-Hui Sung

Residence Address: 5 Ln 160, Edison Rd, Baoshan Township, Hsinchu County,
30844, Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Ta-Pen Guo

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Dated: 3/20/2017

TaPen Guo
Inventor Signature

Inventor Name: Hsiang-Jen Tseng

Residence Address: 5F., No.42, Jianzhong 1st Rd., East Dist., Hsinchu City 300,
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Dated: 2017/1/23

Hsiang-Jen Tseng
Inventor Signature

Inventor Name: Shyue-Shyh Lin

Residence Address: 12F., No.133, Sec. 2, Jiafeng 5th Rd., Zhubei City, Hsinchu County 302,
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Dated:

Inventor Signature

Inventor Name: Lee-Chung Lu

Residence Address: 3F, No. 23, Lane 581, MingShui Rd., Taipei, 104,
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Dated: Lee-Chung Lu

3/17/2017
Inventor Signature

Inventor Name: Chung-Cheng Wu

Residence Address: No 2, Alley 1, Lane 232, Chung-San Road, Ju-Bei City,
Hsin-Chu County, Taiwan (R.O.C.)

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Dated: Chung-Cheng Wu

3/23/2017 Chung-Cheng Wu
Inventor Signature

Inventor Name: Li-Chun Tien

Residence Address: No.11, Yuxing St., East Dist., Tainan City, 701, Taiwan (R.O.C.)

Dated: 1/23.2017

Li-Chun Tien
Inventor Signature

Inventor Name: Jung-Chan Yang

Residence Address: No.27, Aly. 48, Ln. 359, Sec. 2, Fulong Rd., Longtan Township,
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Dated: 2017/1/20

Jung-Chan Yang
Inventor Signature

Inventor Name: Ting Yu Chen

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Dated: 2017.3.16

Ting Yu Chen
Inventor Signature

Inventor Name: Min Cao

Residence Address: No.30, Waterfront Road 2. 6F, Taiwan (R.O.C.)

Dated:____________________

____
Inventor Signature

Inventor Name: Yung-Chin Hou

Residence Address: 2F #34 Lane 270 Section 1 Dun-Hua South, Da-An District,
Road Taipei, 106, Taiwan (R.O.C.)

Dated: MAY 20 2017

Inventor Signature

Inventor Name: Hsiang-Jen Tseng

Residence Address: 5F., No.42, Jianzhong 1st Rd., East Dist., Hsinchu City 300,
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Dated:____________________

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Inventor Signature

Inventor Name: Shyue-Shyh Lin

Residence Address: 12F., No.133, Sec. 2, Jiafeng 5th Rd., Zhubei City, Hsinchu County 302,
Taiwan (R.O.C.)

Dated: 05/19/16

Shyueshyh Lin
Inventor Signature

Inventor Name: Lee-Chung Lu

Residence Address: 3F, No. 23, Lane 581, MingShui Rd., Taipei, 104,
Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Chung-Cheng Wu

Residence Address: No 2, Alley 1, Lane 232, Chung-San Road, Ju-Bei City,
Hsin-Chu County, Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Li-Chun Tien

Residence Address: No.11, Yuxing St., East Dist., Tainan City, 701, Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Jung-Chan Yang

Residence Address: No.27, Aly. 48, Ln. 359, Sec. 2, Fulong Rd., Longtan Township,
Taoyuan County 325, Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Ting Yu Chen

Residence Address: 11F.-3, No.86, Cixiang Rd., East Dist., Hsinchu City 300,
Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature

Inventor Name: Min Cao

Residence Address: No.30, Waterfront Road 2. 6F, Taiwan (R.O.C.)

Dated: 5/19/2016

Inventor Signature

Inventor Name: Yung-Chin Hou

Residence Address: 2F #34 Lane 270 Section 1 Dun-Hua South, Da-An District,
Road Taipei, 106, Taiwan (R.O.C.)

Dated:____________________

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Inventor Signature
