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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHI-MING LU	07/29/2016
CHIH-HUI HUANG	07/29/2016
SHENG-CHAN LI	07/29/2016
JUNG-CHIH TSAO	07/28/2016
YAO-HSIANG LIANG	07/29/2016

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
Street Address:	8, LI-HSIN RD. 6	
Internal Address:	HSINCHU SCIENCE PARK	
City:	HSINCHU	
State/Country:	TAIWAN	
Postal Code:	300-78	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16680043

CORRESPONDENCE DATA

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NAME OF SUBMITTER:	LINDA INGRAM
SIGNATURE:	/Linda Ingram/
DATE SIGNED:	11/11/2019

PATENT REEL: 050973 FRAME: 0989 505767250

Total Attachments: 3

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PATENT REEL: 050973 FRAME: 0990

Docket No.: TSMC Ref P20160195US00 / 24061,3370US01 Customer No.: 000042717

ASSIGNMENT

WHEREAS, we,

(1)	Chi-Ming Lu	of	Kaohsiung City, Taiwan (R.O.C.)
(2)	Chih-Hui Huang	of	Tainan County, Taiwan (R.O.C.)
(3)	Sheng-Chan Li	of	Hsin-Chu, Taiwan (R.O.C.)
(4)	Jung-Chih Tsao	of	Hsin-Chu, Taiwan (R.O.C.)
(5)	Yao-Hsiang Liang	of	Shinchu, Taiwan (R.O.C.)

have invented certain improvements in

A METHOD OF FORMING SEMICONDUCTOR DEVICE

for which we have e	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.

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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:	Chi-Ming Lu	
Residence Address:	No.9, Aly. 75, Ln. 708, Yanping 842, Taiwan (R.O.C.)	g 1st Rd., Qishan Dist., Kaohsiung City
Dated: 2016. 7.	. >9	Inventor Signature
Inventor Name:	Chih-Hui Huang	
Residence Address:	No.43, Aly. 30, Ln. 165, Yong-710, Taiwan (R.O.C.)	an Rd., Yongkang City, Tainan County
Dated: 2016, 7	\\ >9	Chih Hui Huang Inventor Signature
Inventor Name:	Sheng-Chan Li	
Residence Address:	No. 8, Li-Hsin Road 6, Science Hsin-Chu 300-77, Taiwan (R.O	·
Dated: 2016, 1,	29	Sheng - Chan Li Inventor Signature

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Customer No.: 000042717

Inventor Name:

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Jung-Chih Tsao

Residence Address:

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Hsin-Chu 300-77, Taiwan (R.O.C.)

Dated: Jung-choth /son

07/20/2016

Inventor Signature

Inventor Name:

Yao-Hsiang Liang

Residence Address:

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Dated: Yav Kritary diang

Inventor Signatura

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RECORDED: 11/11/2019

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