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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
CHUNG-YUN CHENG	01/05/2016
CHIN-CHANG HSU	01/05/2016
HSIEN-HSIN SEAN LEE	01/05/2016
JIAN-YI LI	01/05/2016
LI-SHENG KE	01/05/2016
WEN-JU YANG	01/05/2016

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.
Street Address:	NO. 8, LI-HSIN RD. VI, HSINCHU SCIENCE PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16272391	

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SIGNATURE:	/Randy A. Noranbrock/
DATE SIGNED:	02/11/2019

PATENT REEL: 048295 FRAME: 0214 505322902

Total Attachments: 2 source=EfiledAssgn#page1.tif

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PATENT REEL: 048295 FRAME: 0215

ASSIGNMENT

In consideration of the premises and other go	od and valuable	consideration in	n hand paid,	the receipt and	I sufficiency of
which is hereby acknowledged, the undersigned,				•	-

1)Chung-Yun CHENG4)Jian-Yi LI2)Chin-Chang HSU5)Li-Sheng KE

) Hsien-Hsin Sean LEE 6) Wen-Ju YANG

who has made a certain new and useful invention, hereby sells, assigns and transfers unto TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD., having a place of business at No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C.

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

METHOD OF DETERMINING COLORABILITY OF A SEMICONDUCTOR DEVICE AND

<u>SYS</u>	TEM FOR IMPLEMENTING THE SAME	···	
(a)	for which an application for United States Letters Patent was filed on	2016-01-07 ; or	, and identified by
(b)	for which an application for United States Letters Patent was executed of	on,	
and th	e undergrand hereby outhorizes and requests the United States Commissi	ionar of Patanta and Two	domonico to icano anni and

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefore and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the date indicated aside my signature:

3) 2016/1/5
Name: Hsien-Hsin Sean LEE Date:

4) Jian-Fi	Li		
Name: Jian-Yi LI			

20/6. /. 5 Date:

5) Li-Sheng KE
Name: Li-Sheng KE
6) Won-Ju (and Name: Wen-Ju YANG

20/6, /, 5 Date: