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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
YI-BO LIAO	05/20/2019
KAI-CHIEH YANG	06/21/2019
CHING-WEI TSAI	05/20/2019
KUAN-LUN CHENG	05/29/2019

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, 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:	16504786	

CORRESPONDENCE DATA

Fax Number: (972)732-9218

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.

Phone: 972-732-1001

Email: docketing@slatermatsil.com **Correspondent Name:** SLATER MATSIL, LLP/TSMC

Address Line 1: 17950 PRESTON ROAD, SUITE 1000

Address Line 4: DALLAS, TEXAS 75252

ATTORNEY DOCKET NUMBER:	TSMP20182252US00	
NAME OF SUBMITTER:	JERRY LETHIN	
SIGNATURE:	/Jerry Lethin/	
DATE SIGNED:	07/08/2019	
	This document serves as an Oath/Declaration (37 CFR 1.63).	
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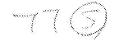
Total Attachments: 2

PATENT REEL: 049688 FRAME: 0713

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PATENT REEL: 049688 FRAME: 0714



ATTORNEY DOCKET NO. TSMP20182252US00

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, with its principal office at 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

TITLE OF INVENTION	Semiconductor Device and Method			
SIGNATURE OF INVENTOR AND NAME	Ji-Boliao. Vi-Boliao	Kai-Chieh Yang	Ching-Wei Tseli	Kuan Lun Chang Kuan-Lun Cheng
DATE	2019, J, 20		2019. 5.20	2019, 5, 29
RESIDENCE	Hsinchu, Taiwan	Kaohsiung City, Taiwan	Hsinchu, Taiwan	Hsinchu, Taiwan

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, with its principal office at 8. Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged. I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herawith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any tacts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year:

TITLE OF INVENTION	Semiconductor Device and Method			
SIGNATURE OF INVENTOR AND NAME	Y-Bo Liao	Kai Chieh Yang	Ching-Wei Tsai	Kuan-Lun Cheng
DATE		7019,06.21		
RESIDENCE	Hsinchu, Taiwan	Kaohsiung City. Taiwan	Hsinchu, Tawan	Hsinchu, "aiwan

Assignment