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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
KAI-FUNG CHANG	10/26/2018
LIEN-YAO TSAI	10/26/2018
CHIEN SHIH TSAI	10/26/2018
SHIH-CHE HUNG	10/26/2018

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD.	
Street Address:	NO.8, LI-HSIN RD. 6, HSINCHU SCIENCE PARK	
City:	HSINCHU	
State/Country:	TAIWAN	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16162736

CORRESPONDENCE DATA

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NAME OF SUBMITTER:	ANTHONY KING	
SIGNATURE:	/Anthony King/	
DATE SIGNED:	01/07/2019	

Total Attachments: 2

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PATENT REEL: 048019 FRAME: 0884

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ASSIGNMENT

WHEREAS, I(we), <u>CHANG, KAI-FUNG, TSAI, LIEN-YAO.</u> <u>TSAI, CHIEN SHIH</u> and <u>HUNG, SHIH-CHE</u> whose post office address(es) appear(s) below, hereinafter referred to as ASSIGNOR, have invented certain new and useful invention entitled

A SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD OF THE SAME

is executed on even date herewith unless at least one of the follow United States Design Patent was	(5.00 - 1.00 - 1.00	
🗆 executed on:		
☐ filed on: 17 October 2018 Serial No.: ☐ established by PCT International Patent Application No.: United States of America ☐ issued onas U.S. Patent No.:		designating the

WHEREAS, TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD. whose post office address is NO.8, LI-HSIN RD. 6, HSINCHU SCIENCE PARK, HSINCHU, TAIWAN, R.O.C. hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest in and to the same in the United States and its territorial possessions;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I (we), ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title, and interest in and to said INVENTION and application throughout the United States of America, including any and all Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application for the full term or terms for which the same may be granted, including all priority rights under any International Convention.

ASSIGNOR further covenants that no assignments, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment;

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) in the United States for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance, litigation and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ALSO, ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all Letters Patent referred to above to ASSIGNEE, as the ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behoof, and for the use and behoof of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

Assignor Name CHANG, KAI-FUNG	2F., NO. 6, ALY. 2, LN. 63, FUXING RD., WENSHAN DIST., TAIPEI CITY 11692, TAIWAN (R.O.C.)
Signature of Assignor (X) Changy Les France	Date of Signature (X) 2018/10/26
Name of Waness (optional)	Name of Winess (optional)
Signature of Witness (optional)	Signature of Witness (Optional)

Assignor Name TSAI, LIEN-YAO	2F., NO.9, ALLEY 7, LANE 384, JHONGHUA RD., HSINCHU CITY, TAIWAN (R.O.C.)
Signature of Assignar (X) T(B) L(B) YOUR Name of Witness (costs) with	Date of Signature (X) M18/10/26
Name of Witness (optional)	Name of Witness (optional)
Signature of Witness (optional)	Signature of Witness (Optional)
Assigner Name	Address
TSAI, CHIEN SHIH	NO.22, JHU-AN 1ST RD., BAOSHAN TOWNSHIP, HSINCHU COUNTY 308, TAIWAN (R.O.C.)
Signature of Assignor (X) Tsax Chien Shih	Date of Signature (X) >3/8/10/24
Name of Witness (optional)	Name of Witness (optional)
Signature of Witness (optional)	Signature of Witness (Optional)
Assignor Name	
HUNG, SHIH-CHE	Address NO.8, LI-HSIN RD. 6, HSINCHU SCIENCE PARK, HSINCHU, TAIWAN (R.O.C.)
Signature of Assignor (X) SWACKE HUNG	Date of Signature (X) >0 [\(\infty \) /2 (
Name of Witness (optional)	Name of Witness (optional)
Signature of Witness (optional)	Signature of Witness (Contour)