505867041 01/16/2020

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TETSU OHTOU	04/09/2017
YUSUKE ONIKI	04/26/2017

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
Street Address:	NO.8, LI-HSIN RD. 6, SCIENCE BASED INDUSTRIAL PARK	
City:	HSINCHU	
State/Country:	TAIWAN	
Postal Code:	300	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16725537

CORRESPONDENCE DATA

Fax Number: (202)756-8087

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:	095714-1063
NAME OF SUBMITTER:	LYNN CRUZ
SIGNATURE:	/LYNN CRUZ/
DATE SIGNED:	01/16/2020

Total Attachments: 4

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COMBINED DECLARATION AND ASSIGNMENT FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

I believe I am the original or an original joint inventor of a claimed invention in the application for which a patent is sought on the invention entitled:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

which	application is:
\boxtimes	attached, or
	United States application number or PCT international application number filed on
The al	bove-identified application was made or authorized to be made by me.
time l autho associ	event that the filing date and/or application number are not entered above at the i execute this document, and if such information is deemed necessary, I hereby rize and request the registered practitioners of McDermott Will & Emery LLP , lated with the Customer Number 20277, to insert above the filing date and/or ration number of the application.
punis	eby acknowledge that any willful false statement made in this declaration is hable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) or both.

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ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I hereby assign to:

TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.

having an address at No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsinchu 300, Taiwan (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention described in the application identified in this document.

I hereby confirm any prior assignment to Assignee, and to the extent that I have not already done so, agree to assign, and hereby do, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions as described in the aforesaid application, to the aforesaid application itself, and all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by the undersigned had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

I hereby covenant and agree to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

I hereby covenant that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment

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Legal name of first inventor	
Tetsu OHTOU	
Pirst inventor's signature	Date
Tetsu Ohtou.	2017/4/9
Legal name of second inventor, If any	AND THE PURPLE AND
Yusuke ONIKI	
Second inventor's signature	Date
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Page 3 of 3

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Legal name of first inventor	
Tetsu OHTOU	
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Legal name of second inventor, if any	
Yusuke ONIKI	
Second inventor's signature	Date
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RECORDED: 01/16/2020