

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
SHENG-CHIH LAI	05/14/2019
CHUNG-TE LIN	05/15/2019
RECEIVING PARTY DATA	
Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
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City:	HSINCHU
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PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16413859
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NAME OF SUBMITTER:	TAN T. TU
SIGNATURE:	/TAN T. TU/
DATE SIGNED:	05/28/2019
Total Attachments: 2	
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ASSIGNMENT

WHEREAS, Sheng-Chih LAI and Chung-Te LIN
 hereafter referred to as ASSIGNOR, has/have invented certain new and useful improvements as
 described and set forth in the below identified application for United States Letters Patent:

Title: **SEMICONDUCTOR MEMORY DEVICE AND METHOD FOR FORMING THE
 SAME**

Filed: May 16, 2019 Serial No. 16/413,859
 Executed on: May 14, 2019 and May 15, 2019

WHEREAS, Taiwan Semiconductor Manufacturing Co., Ltd., of No. 8, Li-Hsin Rd. 6, Hsinchu
 Science Park, Hsinchu 300-78, Taiwan R.O.C., hereinafter referred to as ASSIGNEE, is desirous
 of acquiring ASSIGNOR'S interest in the said invention and application and in any U.S. Letters
 Patent which may be granted on the same;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and
 valuable consideration, receipt of which is hereby acknowledged by Assignor, Assignor has/have
 sold, assigned and transferred, and by these presents does/do sell, assign and transfer unto the said
 Assignee, and Assignee's successors and assigns, all his/her/their rights, title and interest in and to
 the said invention and application and all future improvements thereon, and in and to any Letters
 Patent which may hereafter be granted on the same in the United States, the said interest to be held
 and enjoyed by said Assignee as fully and exclusively as it would have been held and enjoyed by
 said Assignor had this Assignment and transfer not been made, to the full end and term of any
 Letters Patent which may be granted thereon, or of any division, renewal, continuation in whole or
 in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignor further agrees/agree that he/she/they will, without charge to said Assignee,
 but at Assignee's expense, cooperate with Assignee in the prosecution of said application and/or
 applications, execute, verify, acknowledge and deliver all such further papers, including
 applications for Letters Patent and for the reissue thereof, and instruments of assignment and
 transfer thereof, and will perform such other acts as Assignee lawfully may request, to obtain or
 maintain Letters Patent for said invention and improvement, and to vest title thereto in said
 Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignor has/have signed his/her/their name(s) on the date(s)
 indicated.

ASSIGNMENT

May 14th, 2019
Date

Sheng-Chih Lai
Name: Sheng-Chih LAI

5/5, 2019
Date

Lin Chung Te
Name: Chung-Te LIN