

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
HAI-DANG TRINH	02/07/2018
HSING-LIEN LIN	02/07/2018
CHII-MING WU	02/07/2018
CHENG-YUAN TSAI	02/07/2018
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<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15896134
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<b>ATTORNEY DOCKET NUMBER:</b>	0941-3689PUS2
<b>NAME OF SUBMITTER:</b>	THUY-KIM T. NGUYEN
<b>SIGNATURE:</b>	/Thuy-Kim T. Nguyen/
<b>DATE SIGNED:</b>	02/14/2018
<b>Total Attachments: 2</b>	
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**ASSIGNMENT**

WHEREAS, Hai-Dang TRINH, Hsing-Lien LIN, Chii-Ming WU and Cheng-Yuan TSAI 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 DEVICE STRUCTURE WITH MULTIPLE RESISTANCE VARIABLE LAYERS**

Filed: February 14, 2018

Serial No. 15/896,134

Executed on: February 7, 2018

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

2018/02/07 Trinh Hai Dang  
Date Name: Hai-Dang TRINH

2018/02/07 Hsing-Lien Lin  
Date Name: Hsing-Lien LIN

2018/2/7 Chii-Ming Wu  
Date Name: Chii-Ming WU

2018/2/7 Cheng-Yuan Tsai  
Date Name: Cheng-Yuan TSAI