

## 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>
	YU-HUNG CHENG	04/21/2017
	YONG-EN SYU	05/17/2017
	KUO-HWA TZENG	05/02/2017
	KE-DIAN WU	05/24/2018
	CHENG-TA WU	05/02/2017
	YEUR-LUEN TU	05/02/2017
	MING-CHE YANG	07/11/2017
	WEI-KUNG TSAI	05/16/2017
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<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
<b>Street Address:</b>	NO. 8, LI-HSIN RD. 6, HSINCHU SCIENCE PARK	
<b>City:</b>	HSINCHU	
<b>State/Country:</b>	TAIWAN	
<b>Postal Code:</b>	300-78	
<b>PROPERTY NUMBERS Total: 1</b>		
<b>Property Type</b>	<b>Number</b>	
<b>Application Number:</b>	15492472	
<b>CORRESPONDENCE DATA</b>		
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<b>ATTORNEY DOCKET NUMBER:</b>	0941-3546PUS1	
<b>NAME OF SUBMITTER:</b>	ANALIZA STEPINA	
<b>SIGNATURE:</b>	/analiza stepina/	

<b>DATE SIGNED:</b>	06/29/2018
<b>Total Attachments: 4</b> source=2018-06-29_ASSIGNMENT_0941-3546PUS1#page1.tif source=2018-06-29_ASSIGNMENT_0941-3546PUS1#page2.tif source=2018-06-29_ASSIGNMENT_0941-3546PUS1#page3.tif source=2018-06-29_ASSIGNMENT_0941-3546PUS1#page4.tif	

S/N: 15492472

Filing Date: 20-APR-2017

**ASSIGNMENT**

WHEREAS, Yu-Hung CHENG, Yong-En SYU, Kuo-Hwa TZENG, Ke-Dain WU, Cheng-Ta WU, Yeur-Luen TU, Ming-Che YANG, and Wei-Kung 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: **STRUCTURE AND FORMATION METHOD OF SEMICONDUCTOR DEVICE**  
**STRUCTURE**

Filed: \_\_\_\_\_ Serial No. \_\_\_\_\_

Executed on: \_\_\_\_\_

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

2017.04.21 Yu-Hung Cheng  
Date Name: Yu-Hung CHENG (Last name: CHENG)

2017.5.17 Yong-En Syu  
Date Name: Yong-En SYU (Last name: SYU)

2017.5.2 Kuo-Hwa Tzeng  
Date Name: Kuo-Hwa TZENG (Last name: TZENG)

2017.6.30 KDW  
Date Name: Ke-Dain WU (Last name: WU)

2017.05.02 Cheng-Ta Wu  
Date Name: Cheng-Ta WU (Last name: WU)

2017.05.02 YL-Tu  
Date Name: Yeur-Luen TU (Last name: TU)

2017.7.11 Ming-Che Yang  
Date Name: Ming-Che YANG (Last name: YANG)

2017.5.16 WK Tsai  
Date Name: Wei-Kung TSAI (Last name: TSAI)

**ASSIGNMENT**

WHEREAS, Yu-Hung CHENG, Yong-En SYU, Kuo-Hwa TZENG, Ke-Dian WU, Cheng-Ta WU, Yeur-Luen TU, Ming-Che YANG, and Wei-Kung TSAI

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**STRUCTURE**

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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 may fully 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

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2018/05/18 Yong-En Syu  
Date Name: Yong-En SYU (Last name: SYU)

2018/5/24 Kuo-Hwa Tzeng  
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2018/5/24 KE-Dian Wu  
Date Name: Ke-Dian WU (Last name: WU)

                                           
Date Name: Cheng-Ta WU (Last name: WU)

2018/05/09 Yh-Luen Tu  
Date Name: Yeh-Luen TU (Last name: TU)

2018/6/4 Ming-che Yang  
Date Name: Ming-Che YANG (Last name: YANG)

2018/5/17 Wei-Kung Tsai  
Date Name: Wei-Kung TSAI (Last name: TSAI)