#### 506054544 05/11/2020

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6101258

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
CHII-HORNG LI	07/29/2016
CHIH-SHAN CHEN	07/29/2016
ROGER TAI	07/29/2016
YIH-ANN LIN	07/29/2016
YEN-RU LEE	07/22/2016
TZU-CHING LIN	07/29/2016

### **RECEIVING PARTY DATA**

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
Street Address:	8, LI-HSIN RD. 6
Internal Address:	HSINCHU SCIENCE PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300-78

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16872235

### **CORRESPONDENCE DATA**

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ATTORNEY DOCKET NUMBER:	2015-1406/24061.3342US04
NAME OF SUBMITTER:	MARCY OGADO
SIGNATURE:	/Marcy Ogado/
DATE SIGNED:	05/11/2020

**PATENT** REEL: 052629 FRAME: 0943

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# Total Attachments: 6 source=24061-3342US04\_Assignment#page1.tif source=24061-3342US04\_Assignment#page2.tif source=24061-3342US04\_Assignment#page3.tif source=24061-3342US04\_Assignment#page4.tif

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source=24061-3342US04\_Assignment#page6.tif

Customer No.: 42717

### ASSIGNMENT

WHEREAS, we,

(1)	Chii-Horng Li	of	No. 137, Wencai St., Hsinchu County Zhubei City 302, Taiwan, R.O.C.
(2)	Chih-Shan Chen	of	9F., No. 101, Jixian Rd. Sanchong Dist. New Taipei City 24151, Taiwan, R.O.C.
(3)	Roger Tai	of	Tainan City, Taiwan, R.O.C.
(4)	Yih-Ann Lin	of	No. 21, Lane 66, Fuguei St., Hsinchu County Jhudong Township 310, Taiwan, R.O.C.
(5)	Yen-Ru Lee	of	9F., No. 539-2, Sec. 2, Jingguo Rd., North Dist. Hsinchu City 300, Taiwan, R.O.C.
(6)	Tzu-Ching Lin	of	Hsinchu City, Taiwan, R.O.C.

have invented certain improvements in

### V-SHAPE RECESS PROFILE FOR EMBEDDED SOURCE/DRAIN EPITAXY

for which we have filed an application for Letters Patent of the United States of America on August 12, 2016, and assigned U.S. Serial number 15/235,899 ; and

WHEREAS, we authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

WHEREAS, Taiwan Semiconductor Manufacturing Co., Ltd., ("TSMC"), No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, Republic of China, is desirous of obtaining the entire right, title, and interest in, to and under the said invention and the said application in the United States of America and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said

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invention to the said TSMC, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to said TSMC, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name:	Chii-Horng Li	
Residence Address:	No. 137, Wencai St., Hsinchu C Zhubei City 302, Taiwan, R.O.	•
Dated: <u>Lii-Hor</u>	ng Li 5016/1/29	Inventor Signature
Inventor Name: Residence Address:	Chih-Shan Chen 9F., No. 101, Jixian Rd. Sanch New Taipei City 24151, Taiwa	
Dated: 7/29/	2016	Chih - Shan Chen Inventor Signature
Inventor Name:	Roger Tai	
Residence Address:	Tainan City, Taiwan, R.O.C.	
Dated: 7, 29	26/6	Rogar Ter Inventor Signature

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Inventor Name:

Yih-Ann Lin

Residence Address:

No. 21, Lane 66, Fuguei St., Hsinchu County

Jhudong Township 310, Taiwan, R.O.C.

Dated: UTh-Um

Inventor Signature

Inventor Name:

Yen-Ru Lee

Residence Address:

9F., No. 539-2, Sec. 2, Jingguo Rd., North Dist.

Hsinchu City 300, Taiwan, R.O.C.

Dated:

Inventor Signature

Inventor Name:

Tzu-Ching Lin

Residence Address:

Hsinchu City, Taiwan, R.O.C.

Dated: The Chig Li

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Page 3 of 3

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### ASSIGNMENT

WHE	REAS, we,		
· <b>(1)</b>	Chii-Homg Li	of	No. 137, Wencai St., Hsinchu County Zhubei City 302, Taiwan, R.O.C.
(2)	Chih-Shan Chen	of	9F., No. 101, Jixian Rd. Sanchong Dist. New Taipei City 24151, Taiwan, R.O.C.
(3)	Roger Tai	of	Tainan City, Taiwan, R.O.C.
(4)	Yih-Ann Lin	of	No. 21, Lane 66, Fuguei St., Hsinchu County Jhudong Township 310, Taiwan, R.O.C.
(5)	Yen-Ru Lee	of	9F., No. 539-2, Sec. 2, Jingguo Rd., North Dist. Hsinchu City 300, Taiwan, R.O.C.
(6)	Tzu-Ching Lin	of	Hsinchu City, Taiwan, R.O.C.

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NOW. THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said

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AND WE HEREBY further covenant and agree that we will communicate to said TSMC, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name:	Chii-Horng Li	
Residence Address:	No. 137, Wencai St., Hsinchu C Zhubei City 302, Taiwan, R.O.	
Dated: Kir-Her	ng Li 5016/1/29	Inventor Signature
Inventor Name: Residence Address:	Chih-Shan Chen  9F., No. 101, Jixian Rd. Sancho New Taipei City 24151, Taiwan	
Dated: 77, 29	2016	Chih - Shan Chen Inventor Signature
Inventor Name:	Roger Tai	
Residence Address:	Tainan City, Taiwan, R.O.C.	
Dated: 7, 29	2016	Rogar Tev

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Inventor Name:	Yih-Ann Lin	
Residence Address:	No. 21, Lane 66, Fuguei St., Hsinchu County Jhudong Township 310, Taiwan, R.O.C.	
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Dated:		
	TYPE TYPE TO THE TOTAL THE TYPE TO THE TYPE TO THE TYPE TO THE TYPE TYPE TO THE TYPE TYPE TO THE TYPE TYPE TO THE TYPE TYPE TYPE TYPE TYPE TYPE TYPE TYP	Inventor Signature
Inventor Name:	Yen-Ru Lee	
Residence Address:	9F., No. 539-2, Sec. 2, Jingguo Hsinchu City 300, Taiwan, R.O	Rd., North Dist. C
Dated: 07/ >>	12016	Inventor Signature
Inventor Name:	Tzu-Ching Lin	, , , , , , , , , , , , , , , , , , ,
Residence Address:	Hsinchu City, Taiwan, R.O.C.	
Dated:	· · · · · · · · · · · · · · · · · · ·	
		Inventor Signature