505839286 12/27/2019

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT5886220

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHENG-HSIEN WU	07/27/2017
I-SHENG CHEN	07/27/2017

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:	16728393

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ATTORNEY DOCKET NUMBER:	2016-1798/24061.3550US03	
NAME OF SUBMITTER:	LINDA INGRAM	
SIGNATURE:	/Linda Ingram/	
DATE SIGNED:	12/27/2019	

Total Attachments: 2

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> **PATENT REEL: 051376 FRAME: 0752**

Docket No.: P20161798US00/24061.3550US01

Customer No.: 000042717

ASSIGNMENT

WHEREAS, we,

(1) Cheng-Hsien Wu of Hsinchu City 300, Taiwan (R.O.C.)
 (2) I-Sheng Chen of Taipei City, Taiwan 300-77 (R.O.C.)

have invented certain improvements in

LATTICE-MISMATCHED SEMICONDUCTOR SUBSTRATES WITH DEFECT REDUCTION

for which we have	executed an application for Letters Patent of the United States of America,
<u>X</u>	of even date filed herewith; and filed on and assigned application number; and
	athorize the attorney of record to update this document to include Patent Office med necessary (i.e., filing date, serial number, etc.);

WHEREAS, Taiwan Semiconductor Manufacturing Co., Ltd., ("TSMC"), 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, Taiwan 300-78, 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 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

1

16427051 1

Docket No.: P20161798US00/24061.3550US01

Customer No.: 000042717

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:

Cheng-Hsien Wu

Residence Address:

7F.-2, No. 18, Ln. 107, Kexueyuan Rd., East District

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

Dated: >17/7/27

Cheng-Hsien Wu
Inventor Signature

Inventor Name:

I-Sheng Chen

Residence Address:

8, Li-Hsin Rd. 6, Hsinchu Science Park

Hsinchu, Taiwan 300-78, (R.O.C)

Dated: >017 / 7 /27

7-Sheng Chen
Inventor Signature

16427051 1

RECORDED: 12/27/2019

2

PATENT REEL: 051376 FRAME: 0754