506352365 11/12/2020

# PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
SHIH-HSIANG LO	05/01/2020
HSU-TING HUANG	05/23/2020
RU-GUN LIU	06/26/2020

## **RECEIVING PARTY DATA**

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
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Internal Address:	HSINCHU SCIENCE PARK
City:	HSINCHU
State/Country:	TAIWAN
Postal Code:	300-78

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

Property Type	Number
Application Number:	16748551

## **CORRESPONDENCE DATA**

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ATTORNEY DOCKET NUMBER:	20182941/24061.3998US01
NAME OF SUBMITTER:	JANIE MARTINEZ-HOLM
SIGNATURE:	/Janie Martinez-Holm/
DATE SIGNED:	11/12/2020

## **Total Attachments: 4**

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PATENT REEL: 054354 FRAME: 0052

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Docket No.: P2018294IUS01/24061.3998US01

Customer No.: 000042717

ASSIGNMENT

M-26229-0-US-B2

WHEREAS, we,

(1) Shih-Hsiang Lo of Hsinchu City, Taiwan (R.O.C.)
 (2) Hsu-Ting Huang of Hsinchu, Taiwan (R.O.C.)

(3) Ru-Gun Liu of Hsinchu County, Taiwan (R.O.C.)

have invented certain improvements in

#### LITHOGRAPHY MODEL CALIBRATION

for which we have executed an application for Letters Patent of the United States of America,

of even date filed herewith; and filed on January 21, 2020, and assigned application number 16/748,551; 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"), 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

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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: Residence Address	Shih-Hsiang Lo 8, Li-Hsin Rd. 6, Hsinchu Scien- Hsinchu, Tarwan (R.O.C.)	ce Park	
Dated: 2002		Inventor Signature	<i>1</i> 23
Inventor Name Residence Address	Hen-Ting Huang  8, Li-Heim Rd. 6, Heinchu Scien, Heinchu, Taiwan (R.O.C.)	ce Park	
Dated		Inventor Signature	
Inventor Name: Residence Address:	Ru-Gun Liu 8, Li-Hsin Rd, 6, Hsinchu Scien Hsinchu, Taiwan (R.O.C.)	ee Park	
Dated		Inventor Signature	

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	erything possible to aid the said TSMC, its successors, legal representatives
and assigns, to obtain	n and enforce proper patent protection for said invention in all countries.
Audubbbbbbbbbbb	
Inventor Name:	Shih-Hsiang Lo

Residence Address: 8, Li-Hsin Rd. 6, Hsinchu Science Park Hsinchu, Taiwan (R.O.C.) Inventor Signature Inventor Name: Hsu-Ting Huang Residence Address: 8, Li-Hsin Rd. 6, Hsinchu Science Park Hsinchu, Taiwan (R.O.C.) <u> Dou-Liaf Hearf</u> Inventor Signature Dated: 2020/5/23 Inventor Name: Ru-Gun Liu 8, Li-Hsin Rd. 6, Hsinchu Science Park Residence Address: Hsinchu, Taiwan (R.O.C.) Dated:

Inventor Signature

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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:	Shih-Hsiang Lo	
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		Inventor Signature
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Dated: 26 Jun.	2020	Ry-Gun Liu
		Inventor Signature

**RECORDED: 11/12/2020**