

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5638836

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DONG-YO JHENG	03/21/2019
KEN-HSIEN HSIEH	11/07/2018
SHIH-MING CHANG	11/07/2018
CHIH-JIE LEE	11/07/2018
SHUO-YEN CHOU	11/07/2018
RU-GUN LIU	11/08/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	8, LI-HSIN RD. 6
<b>Internal Address:</b>	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>	16057277
<b>CORRESPONDENCE DATA</b>	
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<b>Correspondent Name:</b>	HAYNES AND BOONE, LLP IP SECTION
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<b>ATTORNEY DOCKET NUMBER:</b>	2017-1219/24061.3603US01
<b>NAME OF SUBMITTER:</b>	KYLE HOWARD
<b>SIGNATURE:</b>	/Kyle Howard/
<b>DATE SIGNED:</b>	07/26/2019

PATENT

**Total Attachments: 4**

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Docket No.: P20171219US00/24061.3603US01

Customer No.: 42717

## ASSIGNMENT

WHEREAS, we,

- |       |                 |    |                                           |
|-------|-----------------|----|-------------------------------------------|
| △ (1) | Dong-Yo Jheng   | of | Hsinchu, Taiwan, Republic of China        |
| ✓ (2) | Ken-Hsien Hsieh | of | Taipei City, Taiwan, Republic of China    |
| ✓ (3) | Shih-Ming Chang | of | Hsinchu, Taiwan, Republic of China        |
| (4)   | Chih-Jie Lee    | of | Hsinchu, Taiwan, Republic of China        |
| (5)   | Shuo-Yen Chou   | of | Hualien County, Taiwan, Republic of China |
| (6)   | Ru-Gun Liu      | of | Hsinchu County, Taiwan, Republic of China |

have invented certain improvements in

## OPTICAL PROXIMITY CORRECTION AND PHOTOMASKS

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

\_\_\_\_\_ of even date filed herewith; and  
X filed on 08-07-2018 and assigned application number 16/057,277; 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 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.

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Inventor Name: Dong-Yo Jheng

Residence Address: 8, Li-Hsin Rd. 6, Hsinchu Science Park  
Hsinchu, Taiwan 300-78, Republic of China

Dated: 2019/03/21

*Dong-Yo Jheng*  
Inventor Signature

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Inventor Name: Ken-Hsien Hsieh

Residence Address: 5F, No. 49, Sec. 2, Roosevelt Rd., Da-an Dist.  
Taipei City 106, Taiwan, Republic of China

Dated: \_\_\_\_\_

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Inventor Name: Shih-Ming Chang

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Dated: \_\_\_\_\_

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Inventor Signature

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Inventor Name: Dong-Yo Jheng

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Dated: 2018-11-07

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Dated: 2018/11/07

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Inventor Name: Shuo-Yen Chou

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Dated: 2018/11/07

Inventor Signature

Inventor Name: Ru-Gun Liu

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Dated: Nov. 8, 2018

Inventor Signature