## 505466143 05/08/2019

# PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
MANISH KUMAR SINGH	04/27/2015
BO-WEI CHOU	04/27/2015
JUI-MING SHIH	04/27/2015
WEN-YU KU	04/27/2015
PING-JUNG HUANG	04/27/2015
PI-CHUN YU	04/27/2015

#### **RECEIVING PARTY DATA**

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
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City:	HSINCHU	
State/Country:	TAIWAN	
Postal Code:	300	

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

Property Type	Number	
Application Number:	16404533	

## **CORRESPONDENCE DATA**

Fax Number:

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ATTORNEY DOCKET NUMBER:	T1516.10117US02	
NAME OF SUBMITTER:	R. BURNS ISRAELSEN	
SIGNATURE: /R. Burns Israelsen, Reg. No. 42685/		
DATE SIGNED:	05/08/2019	

505466143 REEL: 049116 FRAME: 0596

## **Total Attachments: 2**

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PATENT REEL: 049116 FRAME: 0597

#### **ASSIGNMENT**

This assignment agreement is applicable to an invention entitled (Invention Title)				
METHOD FOR ETCHING ETCH LAYER AND WAFER ETCHING APPARATUS				
The PATENT RIGHTS referred to in this agreement are:				
(check one) a patent application for this invention, executed by the ASSIGNOR(S)				
concurrently with this assignment.				
☑U.S. patent application Serial No. 14/696,973 ,filed April 27, 2015				
a U.S. patent application based on PCT International Application				
Nofiled on (date)(U.S. patent application				
Serial No, if known).				
U.S. patent No, issued				
The PATENT RIGHTS also include all divisions, reissues, continuations and extensions of				
the patents and patent applications identified above.				
The PATENT RIGHTS assigned under this agreement are:				
(check one) ⊠U.S. patent rights only.				
Worldwide patent rights. In this case, the assignee shall have the right to				
claim the benefit of the filing date of any U.S. or foreign patent application				
for this invention.				
The ASSIGNOR(S) referred to in this agreement is (or are) the inventor(s) whose signatures				
appear on page 2 of this Assignment and any Supplemental Sheet(s).				
The ASSIGNEE referred to in this agreement is:				
(Name of Assignee) TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.				
(Address) NO.8, LI-HSIN RD.6, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU,				
TAIWAN 300, R.O.C.				
The ASSIGNEE is:				
(check one) ☐ An individual.				
☐A Partnership.				
☐ A Corporation ofTAIWAN, R.O.C(specify state or country)				
(other)				
The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and				

The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and valuable consideration, receipt of which is acknowledged, hereby assign(s) the following rights to the ASSIGNEE, its successors and assigns:

the full and exclusive right to the invention;

the entire right, title and interest in and to the PATENT RIGHTS;

the right to sue and recover for any past infringement; and

the right to claim priority under 35 USC 119, 35 USC 120, or any other applicable provisions, based on any earlier patent applications for this invention.

PATENT REEL: 049116 FRAME: 0598

# THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO ASSIGNEE: TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. INVENTION TITLE: METHOD FOR ETCHING ETCH LAYER AND WAFER ETCHING APPARATUS

As to all U.S. patent applications assigned under this agreement, the ASSIGNOR(S) hereby authorize(s) and request(s) the Commissioner of Patents and Trademark to issue all Letters Patent to the ASSIGNEE as the assignee of the entire right, title and interest, for the sole use and enjoyment of said ASSIGNEE, its successors and assigns.

Further, the ASSIGNOR(S) agree(s) to communicate to said ASSIGNEE, or its representatives, any fact known to the ASSIGNOR(S) with respect to said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and reissue applications, execute all necessary assignment papers to cause and all Letter Patent to be issued to said ASSIGNEE, make all rightful oaths and generally do everything necessary or desirable to aid said ASSIGNEE, its successors and assigns, to obtain and enforce proper protection for said invention.

The ASSIGNOR(S) authorize(s) the attorneys and agents who have the power of attorney in this application to check any appropriate boxes and to insert the Serial Number and filing date in this document after it has been executed.

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MANISH KUMAR SINGH	M	2016/04/27
Name of sole or first inventor	Signature	Date
	♠ 1	1 5/1/
Bo-Wei CHOU	Shicher	2015/04/2/
Name of second inventor, if any	Signature	Date
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Jui-Ming SHIH	//w-My Am	V/
Name of third inventor, if any	Signature	Date /
•		
Wen-Yu KU	Mya	2015/4/27
Name of fourth inventor, if any	Signature	Date
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Ping-Jung HUANG	1) Wang	2016/4/25
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Pi-Chun YU	Pichun Yn	2015/4/21
Name of sixth inventor, if any	Signature	Date

PATENT REEL: 049116 FRAME: 0599

**RECORDED: 05/08/2019**