### PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
CHENG-HUA LIU	09/27/2019
YUN-XIANG LIN	09/27/2019
YUAN-TE HOU	09/27/2019
CHUNG-HSING WANG	09/27/2019

#### **RECEIVING PARTY DATA**

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

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

Property Type	Number	
Application Number:	17315023	

#### **CORRESPONDENCE DATA**

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 435-252-1360
Email: crigby@mabr.com
Correspondent Name: MASCHOFF BRENNAN

Address Line 1: 1389 CENTER DRIVE, SUITE 300

Address Line 4: PARK CITY, UTAH 84098

ATTORNEY DOCKET NUMBER: T1516.10615US04

NAME OF SUBMITTER: R. BURNS ISRAELSEN

SIGNATURE: /R. Burns Israelsen, Reg. No. 42685/

DATE SIGNED: 05/07/2021

**Total Attachments: 2** 

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PATENT 506652422 REEL: 056176 FRAME: 0415

## ASSIGNMENT

This assignment agreement is applicable to an invention entitled (Invention Title)					
LEAKAGE ANALYSIS ON SEMICONDUCTOR DEVICE					
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. 16/586,658 , filed September 27, 2019					
☐ 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:					
☑U.S. patent rights only.					
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 of					
(other)					
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: 056176 FRAME: 0416

RECORDED: 05/07/2021

# THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO ASSIGNEE: TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. INVENTION TITLE: LEAKAGE ANALYSIS ON SEMICONDUCTOR DEVICE

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.

Cheng-Hua LIU	Ching-Hua Liu	2019, 9, 27
Name of sole or first inventor	Signature	Date
Yun-Xiang LIN	Yan-Xiang Lin	2017. 9. 27
Name of second inventor, if any	Signature	Date
Yuan-Te HOU	Yugan To Liber	70(9, 9, 21)
Name of third inventor, if any	Signature	Date
Chung-Hsing WANG	Chang-Hsiz Was	9/27/2019
Name of fourth inventor, if any	Signature	Date

PATENT REEL: 056176 FRAME: 0417