

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CHING-WEI WU	03/15/2021
MING-EN BU	03/22/2021
HE-ZHOU WAN	03/15/2021
HIDEHIRO FUJIWARA	03/15/2021
XIU-LI YANG	03/24/2021
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	8, LI-HSIN RD. 6, HSINCHU SCIENCE PARK
<b>City:</b>	HSINCHU
<b>State/Country:</b>	TAIWAN
<b>Postal Code:</b>	300-78
<b>Name:</b>	TSMC CHINA COMPANY, LIMITED
<b>Street Address:</b>	4000, WEN XIANG RD., SONGJIANG
<b>City:</b>	SHANGHAI
<b>State/Country:</b>	CHINA
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16897056
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(703)518-5499
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<b>Phone:</b>	7036841111
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<b>ATTORNEY DOCKET NUMBER:</b>	T5057-1471

<b>NAME OF SUBMITTER:</b>	RANDY A. NORANBROCK
<b>SIGNATURE:</b>	/Randy A. Noranbrock/
<b>DATE SIGNED:</b>	03/26/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).
<b>Total Attachments: 3</b> source=EFiledCombinedDec_Assgn2021-03-26#page1.tif source=EFiledCombinedDec_Assgn2021-03-26#page2.tif source=EFiledAssg_Ming-En-BU2021-03-26#page1.tif	

**DECLARATION AND ASSIGNMENT**

Title of Invention: **METHOD OF CERTIFYING SAFETY LEVELS OF SEMICONDUCTOR  
MEMORIES  
IN INTEGRATED CIRCUITS**

As a below named inventor, or one of the below named joint inventors, I hereby declare that:

This declaration and assignment is directed to the application attached hereto. If the application is not attached hereto, the application is as identified by the attorney docket number as set forth above and/or the following:

United States Application No. or PCT International Application No.: 16/897,056, filed on 2020-06-09

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

The above-identified invention shall henceforth be referred to herein as the "INVENTION" and the above-identified application shall henceforth be referred to herein as the "APPLICATION."

**Taiwan Semiconductor Manufacturing Company, Ltd.**, a corporation organized and existing under the laws of Taiwan, with its principal office at 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, 300-78, Taiwan and its heirs, successors, legal representatives and assigns shall henceforth be referred to collectively herein as ASSIGNEE

and

**TSMC CHINA COMPANY, LIMITED**, a corporation organized and existing under the laws of China, with its principal office at 4000, Wen Xiang Rd., Songjiang, Shanghai, CHINA and its heirs, successors, legal representatives and assigns shall henceforth be referred to collectively herein as ASSIGNEE.

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to ASSIGNEE, its successors and assigns, my entire right, title and interest in and to said INVENTION and in and to said APPLICATION and all patents which may be granted therefor, and all future non-provisional applications including, but not limited to, divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said INVENTION, or patents resulting therefrom, insofar as my interest is concerned, to ASSIGNEE, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

Additionally, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have also assigned and hereby assign to ASSIGNEE, its successors and assigns, all of my rights to the INVENTION disclosed in said APPLICATION, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and I further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such rights.

I hereby further agree that I will communicate to ASSIGNEE, or to its successors, assigns, and legal representatives, any facts known to me respecting said INVENTION or the file history thereof, and at the expense of ASSIGNEE, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid ASSIGNEE, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

I hereby grant the attorney of record the power to insert on this document any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year.

1.	NAME OF INVENTOR (Full Legal Name) : <u>Ching-wei WU</u>
Signature: <u>/ Ching-Wei WU /</u>	Date: <u>3/15/2021</u>
2.	NAME OF INVENTOR (Full Legal Name) : _____
Signature: <u>/ _____ /</u>	Date: _____
3.	NAME OF INVENTOR (Full Legal Name) : <u>He-Zhou WAN</u>
Signature: <u>/ He-Zhou WAN /</u>	Date: <u>3/15/2021</u>
4.	NAME OF INVENTOR (Full Legal Name) : <u>Hidehiro FUJIWARA</u>
Signature: <u>/ Hidehiro FUJIWARA /</u>	Date: <u>3/15/2021</u>
5.	NAME OF INVENTOR (Full Legal Name) : <u>Xiu-Li YANG</u>
Signature: <u>/ Xiu-Li YANG /</u>	Date: <u>3/24/2021</u>

76(S)

NP-26614-0-US-B3

Docket No. T507-1471  
P20183384US00

### ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

- 1) Ching-Wei WU
- 2) Ming-En BU
- 3) He-Zhou WAN
- 4) Hidehiro FUJIWARA
- 5) XiuLi YANG

who has made a certain new and useful invention, hereby sells, assigns and transfers unto TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD., having a place of business at No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C. and

TSMC CHINA COMPANY, LIMITED, having a place of business at 4000, Wen Xiang Rd., Songjiang, Shanghai, CHINA

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

### METHOD OF CERTIFYING SAFETY LEVELS OF SEMICONDUCTOR MEMORIES IN INTEGRATED CIRCUITS

- (a) for which an application for United States Letters Patent was filed on 2020-06-09, and identified by United States Patent Application No. 16/897,056; or
- (b) for which an application for United States Letters Patent was executed on \_\_\_\_\_,

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefore and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the date indicated aside my signature:

- 1) Ching-Wei Wu  
Name: Ching-Wei WU
- 2) Ming-En BU  
Name: Ming-En BU
- 3) \_\_\_\_\_  
Name: He-Zhou WAN

- 2020.12.23.  
Date:
- 2021.3.22  
Date:
- \_\_\_\_\_  
Date: