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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HSI-WEN TIEN	11/07/2017
CHIH-WEI LU	11/07/2017
WEI-HAO LIAO	11/07/2017
PIN-REN DAI	11/07/2017
CHUNG-JU LEE	11/07/2017

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.	
Street Address:	NO.8, LI-HSIN RD.6	
Internal Address:	SCIENCE-BASED INDUSTRIAL PARK	
City:	HSINCHU	
State/Country:	TAIWAN	
Postal Code:	300	

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	15813055	

CORRESPONDENCE DATA

Fax Number: (435)252-1360

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: 4352521360 trhone@mabr.com Email: R. BURNS ISRAELSEN **Correspondent Name:** Address Line 1: MASCHOFF BRENNAN Address Line 2: 1389 CENTER DR. SUITE 300

Address Line 4: PARK CITY, UTAH 84098

ATTORNEY DOCKET NUMBER:	T1516.10402US01	
NAME OF SUBMITTER:	R. BURNS ISRAELSEN	
SIGNATURE:	/R. Burns Israelsen, Reg. No. 42685/	
DATE SIGNED:	11/22/2017	

Total Attachments: 2

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ASSIGNMENT

This assignment agreement is applicable to an invention entitled (Invention Title)				
MEMORY DEVICE AND METHOD FOR MANUFACTURING THE SAME				
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. 15/813,055 ,filed November 14, 2017				
☐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,				
<u>TAIWAN 300, R.O.C.</u>				
The ASSIGNEE is:				
$(check\ one)$ An individual.				
A Partnership.				
A Corporation of <u>TAIWAN, R.O.C.</u> (specify state or country)				
(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.

RECORDED: 11/22/2017

THIS IS PAGE 2 OF AN ASSIGNMENT FROM THE INVENTOR(S) TO ASSIGNEE: TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. INVENTION TITLE: MEMORY DEVICE AND METHOD FOR MANUFACTURING THE SAME

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.

Hsi-Wen TIEN	(ds. Ven Tien	2017 11. 7
Name of sole or first inventor	Signature	Date
Chih-Wei LU	Chih-Wej Lu	2017, 11/7
Name of second inventor, if any	Signature	Date
Wei-Hao LIAO Name of third inventor, if any	Ver-Hao LIAO Signature	7017 /1/2 Date
Pin-Ren DAI Name of fourth inventor, if any	Now-lead DAN Signature	Date 11/1).
Chung-Ju LEE Name of fifth inventor, if any	Chung-Tu Lee Signature	>0/2 11/2 Date