505766347 11/11/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5813163

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HSIN-CHE CHIANG	06/12/2017
JU-YUAN TZENG	06/12/2017
CHUN-SHENG LIANG	06/12/2017
SHU-HUI WANG	06/12/2017
CHIH-YANG YEH	06/12/2017
JENG-YA DAVID YEH	06/13/2017

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:	16678642

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.

Email: kcale@mabr.com
Correspondent Name: R. BURNS ISRAELSEN
Address Line 1: MASCHOFF BRENNAN

Address Line 2: 1389 CENTER DRIVE, SUITE 300

Address Line 4: PARK CITY, UTAH 84098

ATTORNEY DOCKET NUMBER: T1516.10630US03

NAME OF SUBMITTER: R. BURNS ISRAELSEN

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

DATE SIGNED: 11/11/2019

PATENT REEL: 050969 FRAME: 0418

Total Attachments: 2

source=T1516.10630US03 Assignment#page1.tif source=T1516.10630US03 Assignment#page2.tif

PATENT REEL: 050969 FRAME: 0419

ASSIGNMENT

This assign:	nent agreement is a	pplicable to an inven	tion entitled (Invention Title)	
SEMICONDUCTOR DEVICE AND METHOD FOR MANUFACTURING THE SAME				
The PATEN	VT RIGHTS referred	I to in this agreement	are:	
$(check\ one)$	∑a patent applicat	ion for this invention	, executed by the ASSIGNOR(S)	
	concurrently with	n this assignment.		
	☐U.S. patent appli	cation Serial No	_,filed	
	☐a U.S. patent app	lication based on PC	T International Application	
	No	filed on (date)	(U.S. patent application	
	Serial No	, if known).		
	☐U.S. patent No	, issued		
The PATEN	IT RIGHTS also inc	lude all divisions, rei	ssues, continuations and extensions of	
the patents a	and patent application	ns identified above.		
The PATEN	T RIGHTS assigne	d under this agreeme	nt are:	
(check one)	⊠U.S. patent right	s only.		
	☐Worldwide pater	t 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	ı .		
The ASSIG	NOR(S) referred to	in this agreement is (or are) the inventor(s) whose signatures	
appear on pa	ige 2 of this Assigni	ment and any Suppler	mental Sheet(s).	
The ASSIG	NEE referred to in the	nis agreement is:		
(Name of As	signee <u>) TAIWAN S</u>	EMICONDUCTOR	MANUFACTURING CO., LTD.	
(Address <u>) N</u>	<u>0.8, LI-HSIN RD.6</u>	, SCIENCE-BASED	INDUSTRIAL PARK, HSINCHU,	
TAIWAN 30	00, R.O.C.			
The ASSIGN	NEE is:			
(check one)[An individual.			
	A Partnership.			
	☑A Corporation of	TAIWAN, R.O.	C. (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.

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

Hsin-Che CHIANG	Han-Cho GIZAMG	2017/6/12
Name of sole or first inventor	Signature	Date
Ju-Yuan TZENG	Ju-Tuan Tzeng	2017/6/12
Name of second inventor, if any	Signature	Date
Chun-Sheng LIANG Name of third inventor, if any	Chun-Sheng Liang Signature	7017 /06/12 Date
Shu-Hui WANG	Shu-) dui Wang	2017/6/12
Name of fourth inventor, if any	Signature &	Date
Chih-Yang YEH Name of fifth inventor, if any	Chih-Tang T217 Signature	/ 2017/6/12 Date
Jeng-Ya David YEH Name of sixth inventor, if any	Jystyfn Signature	<u>6/13/2013</u> Date

PATENT REEL: 050969 FRAME: 0421

RECORDED: 11/11/2019