PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5721793

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the TYPOGRAPHICAL DATA ENTRY ERROR OF 3RD INVENTOR'S NAME previously recorded on Reel 033046 Frame 0526. Assignor(s) hereby confirms the ASSIGNMENT OF ASSIGNOR'S INTEREST.

CONVEYING PARTY DATA

Name	Execution Date
CHING-FENG FU	05/22/2014
DE-FANG CHEN	05/22/2014
YU-CHAN YEN	05/22/2014
CHIA-YING LEE	05/26/2014
CHUN-HUNG LEE	05/23/2014
HUAN-JUST LIN	05/23/2014

RECEIVING PARTY DATA

Name:	Taiwan Semiconductor Manufacturing Company, 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:	14289167

CORRESPONDENCE DATA

Fax Number: (972)732-9218

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: 972-732-1001
Email: docketing@slatermatsil.com
Correspondent Name: SLATER MATSIL, LLP
Address Line 1: 17950 PRESTON RD., SUITE 1000
Address Line 4: DALLAS, TEXAS 75252

ATTORNEY DOCKET NUMBER:	TSM14-0089
NAME OF SUBMITTER:	MARANDA BRALLEY
SIGNATURE:	/Maranda Bralley/

DATE SIGNED:	09/17/2019

Total Attachments: 8

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source=TSM14-0089 NOR Original Assignment#page5.tif
source=TSM14-0089 NOR Original Assignment#page6.tif
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source=TSM14-0089 Corrective Assignment#page2.tif

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 9, 2014

PTAS

SLATER & MATSIL, L.L.P.
17950 PRESTON ROAD, SUITE 1000
DALLAS, TX 75252

502840969

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT RECORDATION BRANCH OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE ASSIGNMENT RECORDATION BRANCH AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT RECORDATION BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 06/06/2014 REEL/FRAME: 033046/0526
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

DOCKET NUMBER: TSM14-0089

ASSIGNOR: FU, CHING-FENG	DOC DATE: 05/22/2014
ASSIGNOR: CHEN, DE-FANG	DOC DATE: 05/22/2014
ASSIGNOR: YEN, YU-CHEN	DOC DATE: 05/22/2014
ASSIGNOR: LEE, CHIA-YING	DOC DATE: 05/26/2014
ASSIGNOR: LEE, CHUN-HUNG	DOC DATE: 05/23/2014
ASSIGNOR: LIN, HUAN-JUST	DOC DATE: 05/23/2014

ASSIGNEE:
TAIWAN SEMICONDUCTOR MANUFACTURING
COMPANY, LTD.
NO. 8, LI-HSIN RD. 6
SCIENCE-BASED INDUSTRIAL PARK
HSIN-CHU, TAIWAN 300-77

APPLICATION NUMBER: 14289167 FILING DATE: 05/28/2014
PATENT NUMBER: ISSUE DATE:
TITLE: SELF-ALIGNED NANOWIRE FORMATION USING DOUBLE PATTERNING

ASSIGNMENT RECORDATION BRANCH
PUBLIC RECORDS DIVISION

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHING-FENG FU	05/22/2014
DE-FANG CHEN	05/22/2014
YU-CHEN YEN	05/22/2014
CHIA-YING LEE	05/26/2014
CHUN-HUNG LEE	05/23/2014
HUAN-JUST LIN	05/23/2014

RECEIVING PARTY DATA

Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.
Street Address:	NO. 8, LI-HSIN RD. 6
Internal Address:	SCIENCE-BASED INDUSTRIAL PARK
City:	HSIN-CHU
State/Country:	TAIWAN
Postal Code:	300-77

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14289167

CORRESPONDENCE DATA

Fax Number: (972)732-9218
Phone: 972-732-1001
Email: docketing@slater-matsil.com

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.

Correspondent Name: SLATER & MATSIL, L.L.P.

Address Line 1: 17950 PRESTON ROAD, SUITE 1000
Address Line 4: DALLAS, TEXAS 75252

ATTORNEY DOCKET NUMBER:	TSM14-0089
NAME OF SUBMITTER:	WENDY SAXBY
Signature:	/Wendy Saxby/
Date:	06/06/2014

Total Attachments: 2
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RECEIPT INFORMATION

EPAS ID: PAT2887565
Receipt Date: 06/06/2014

ATTORNEY DOCKET NO.
TSM14-0089

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 8, Li-Hsin Rd. 6 Science-Based Industrial Park, Hsin-Chu 300-77 Taiwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said 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 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 patent resulting therefrom, insofar as my interest is concerned, to said 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.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign 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 further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said 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 said 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 said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

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

TITLE OF INVENTION	SELF-ALIGNED NANOWIRE FORMATION USING DOUBLE PATTERNING			
SIGNATURE OF INVENTOR AND NAME	✓ Ching-Feng Fu Ching-Feng Fu	✓ De-Fang Chen De-Fang Chen	✓ Yu-Chan Yen Yu-Chan Yen	✓ Chia-Ying Lee
DATE	✓ 2014/5/22	✓ 2014/5/22	✓ 2014/05/22	✓ 2014/5/26
RESIDENCE	Taichung City, Taiwan	Hsin-Chu, Taiwan	Taipei City, Taiwan	New Taipei City, Taiwan

ATTORNEY DOCKET NO.

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 8, Li-Hsin Rd. 6 Science-Based Industrial Park, Hsin-Chu 300-77 Taiwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said 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 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 patent resulting therefrom, insofar as my interest is concerned, to said 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.

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

TITLE OF INVENTION	SELF-ALIGNED NANOWIRE FORMATION USING DOUBLE PATTERNING			
SIGNATURE OF INVENTOR AND NAME	✓ Chun-Hung Lee Chun-Hung Lee	✓ Huan-Just Lin Huan-Just Lin		
DATE	✓ 2014/5/23	✓ 2014/5/23		
RESIDENCE	Hsin-Chu, Taiwan	Hsin-Chu, Taiwan		

ATTORNEY DOCKET NO.
TSM14-0089

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 8, Li-Hsin Rd. 6 Science-Based Industrial Park, Hsin-Chu 300-77 Taiwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said 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 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 patent resulting therefrom, insofar as my interest is concerned, to said 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.

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DATE	✓ 2014/5/22	✓ 2014/5/22	✓ 2014/05/22	✓ 2014/5/26
RESIDENCE	Taichung City, Taiwan	Hsin-Chu, Taiwan	Taipei City, Taiwan	New Taipei City, Taiwan

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SIGNATURE OF INVENTOR AND NAME	✓ Chun-Hung Lee Chun-Hung Lee	✓ Huan-Just Lin Huan-Just Lin		
DATE	✓ 2014/5/23	✓ 2014/5/23		
RESIDENCE	Hsin-Chu, Taiwan	Hsin-Chu, Taiwan		