PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5413050

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PINLEI EDMUND CHU	03/04/2019
CHUN-WEI HSU	10/08/2018
LING-FU NIEH	02/12/2019
CHI-JEN LIU	10/05/2018
LIANG-GUANG CHEN	10/05/2018
YI-SHENG LIN	10/05/2018

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:	16152965	

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

17950 PRESTON RD., SUITE 1000 Address Line 1:

Address Line 4: DALLAS, TEXAS 75252

ATTORNEY DOCKET NUMBER:	TSMP20161759US00
NAME OF SUBMITTER:	GUDDI KANOJIA
SIGNATURE:	/Guddi Kanojia/
DATE SIGNED:	03/08/2019

Total Attachments: 4

PATENT REEL: 048551 FRAME: 0469

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> PATENT REEL: 048551 FRAME: 0470

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 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 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	Semiconductor Device Cleaning Solution, Method of Use, and Method of Manufacture			
SIGNATURE OF INVENTOR AND NAME	A: // Pinlei Edmund Chu	Chun-Wei Hsu	Ling-Fu Nieh	Chi-Jen Liu
DATE	05/04/2019	Oldi-Wei 130	2113-1 (1816)	Om Con Liu
RESIDENCE	Hsinchu, Taiwan	Hsinchu, Taiwan	Taipei City, Taiwan	Taipei City, Taiwan

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 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 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;

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

TITLE OF INVENTION	Semiconductor Device Cleaning Solution, Method of Use, and Method of Manufacture			
SIGNATURE OF INVENTOR AND NAME	Pinlei Edmund Chu	Chun-Wei Hsu	Ling-Fu Nieh	Chi-Jen Liu
DATE			2019.02.12	
RESIDENCE	Hsinchu, Taiwan	Hsinchu, Taiwan	Taipei City, Taiwan	Talpel City, Talwan



ATTORNEY DOCKET NO. TSMP20161759US00

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 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 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;

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TITLE OF INVENTION	Semiconductor Device Cleaning Solution, Method of Use, and Method of Manufacture			
SIGNATURE OF INVENTOR AND NAME	Pintei Edmund Chu	Chun-Wed Hou.	Ling-Fu Nieh	Chi-Jea Con
DATE		2018/10/8	2	2st 8/(e/5
RESIDENCE	Hsinchu, Taiwan	Hsinchu, Taiwan	Taipei City, Taiwan	Taípeí City, Taiwan

Page 1 of 2

Assignment

ATTORNEY DOCKET NO. TSMP20161759US00

ASSIGNMENT

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

TITLE OF INVENTION	Semiconductor Device Cleaning Solution, Method of Use, and Method of Manufacture			
SIGNATURE OF INVENTOR AND NAME	Canf Canf Chin	Yi-Sheng Lin Yi-Sheng Lin		
DATE	No. 8, 10, 155	Solg. (0.0)		
RESIDENCE	Hsinchu, Taiwan	Taichung City, Taiwan		

Page 2 of 2

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PATENT REEL: 048551 FRAME: 0474