PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6166156

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JAW-JUINN HORNG	05/29/2020
CHIN-HO CHANG	05/29/2020
YUNG-CHOW PENG	05/29/2020

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:	16881380

CORRESPONDENCE DATA

Fax Number: (612)332-9081

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: 6123325300

Email: ccatalano@merchantgould.com

Correspondent Name: TONG WU

Address Line 1: 150 SOUTH FIFTH STREET

Address Line 2: SUITE 2200

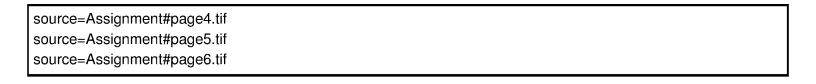
Address Line 4: MINNEAPOLIS, MINNESOTA 55402-4247

ATTORNEY DOCKET NUMBER:	17829.0100USU1
NAME OF SUBMITTER:	/TONG WU/
SIGNATURE:	/Tong Wu/
DATE SIGNED:	06/23/2020

Total Attachments: 6

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PATENT 506119431 REEL: 053008 FRAME: 0684



Atty, Docket No.: 17829.0100USU1/P20190259US01

PATENT 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.

Atty. Docket No.: 17829.0100USU1/P20190259US01

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	DAC/ADC ARCHITECTURE FOR AI IN MEMORY
SIGNATURE	Jaw-Juinn Horng
OF	1 Tous (ANTU CHONA)
INVENTOR	
AND NAME	
DATE	2020/5/29
RESIDENCE	8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300–78 Taiwan, R.O.C.

Atty. Docket No.: 17829.0100USU1/P20190259US01

PATENT 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.

Atty. Docket No.: 17829.0100USU1/P20190259US01

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

TITLE OF	DAC/ADC ARCHITECTURE FOR AI IN MEMORY	
INVENTION		
SIGNATURE	Chin-Ho Chang	
OF	Chin-Ho Chang	
INVENTOR	Cam - A Come	
AND NAME		
DATE	2020,05,29	
RESIDENCE	8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, R.O.C.	

Atty, Docket No.: 17829.0100USU1/P20190259US01

PATENT ASSIGNMENT

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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.

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Atty. Docket No.: 17829.0100USU1/P20190259US01

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

TITLE OF	DAC/ADC ARCHITECTURE FOR ALIN MEMORY	
INVENTION		
SIGNATURE	Yung-Chow Peng	
OF		
INVENTOR	Mana Chas Poss	
AND NAME	30 11 199	
DATE	5/29, 2020	
RESIDENCE	8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, R.O.C.	

PATENT REEL: 053008 FRAME: 0691

RECORDED: 06/23/2020