506857215 09/07/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT6904036

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Liang Yi	09/06/2021
ZHIGUO LI	09/06/2021
CHI REN	09/06/2021
Xiaojuan Gao	09/06/2021
Boon Keat Toh	09/06/2021

RECEIVING PARTY DATA

Name:	UNITED MICROELECTRONICS CORP.
Street Address:	No.3, Li-Hsin Road 2, Science-Based Industrial Park
City:	Hsin-Chu City
State/Country:	TAIWAN

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17468637

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.

Phone: 3027291562

Email: Patent.admin.uspto.cr@naipo.com

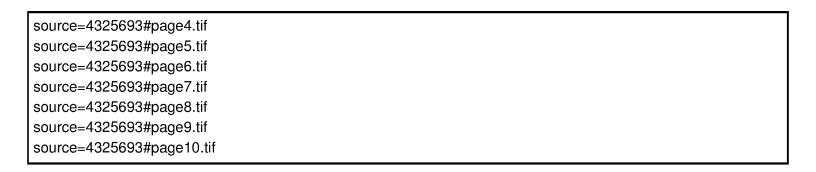
Correspondent Name: WINSTON HSU

Address Line 1: 5F., NO.389, FUHE RD., YONGHE DIST.,

Address Line 4: **NEW TAIPEI CITY, TAIWAN**

ATTORNEY DOCKET NUMBER:	NAUP3898USA
NAME OF SUBMITTER:	KATE YEH
SIGNATURE:	/KATE YEH/
DATE SIGNED:	09/07/2021

Total Attachments: 10 source=4325693#page1.tif source=4325693#page2.tif source=4325693#page3.tif



Title of Invention: SEMICONDUCTOR MEMORY DEVICE AND FABRICATION THEREOF

As the below named inventor, I here This declaration is directed to:	eby declare that:		
☑ The attached application, o	r		
☐ United States application no	umber	filed on	, or
☐ PCT international application	on number	filed on	
The above-identified application was	s made or authorized to be made	by me.	
I believe that I am the original inventapplication.	tor or an original joint inventor of	a claimed invention	on in the
I hereby acknowledge that any willfuunder18 U.S.C. 1001 by fine or impr	ıl false statement made in this de risonment of not more than five (eclaration is punis 5) years, or both.	hable
In consideration of the payment by	UNITED MICROELECTRO	NICS having	a postal address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hs	sin-Chu City 30	00, Taiwan, R.O.C
(referred to as "ASSIGNEE"below) t acknowledged, andfor other good at	o I of the sum of One Dollar (\$ 1. nd valuable consideration.	.00), the receipt o	f which is hereby
I hereby sell, assign and transfer to the entire right, title and interest in a invention as above-identified applica- invention by the above application o substitutes, or extensions thereof, a	nd to any and all improvements wation and, in and to, all Letters Par r any continuations, continuation	which are disclose atent to be obtaine -in-part, divisions.	ed in the ed for said . renewals.
I hereby covenant that no assignme entered into which would conflict wit	nt, sale, agreement or encumbra h this assignment;	nce has been or v	will be made or
I further covenant that ASSIGNEE wand documents relating to said inverse known and accessible to I and will to related thereto and will promptly executed.	ntion and said Letters Patent and estify as to the same in any interf	l legal equivalents erence, litigation i	as mav be
representatives any and all papers, maintain, issue and enforce said app equivalents thereof which may be no IN WITNESS WHEREOF, I have he	plication, said invention and said ecessary or desirable to carry ou	Letters Patent an	d said ereof
Note: An application data sheet (PT inventive entity, must accompany th	O/SB/14 or equivalent), including is form. Use this form for each ac	naming the entire	e

Page 1 of 10

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

LEGAL NAME OF INVENTOR(ASSIGNOR)				
Inventor:	Liang Yi	Date:	Sex 06, 202/	
Signature;	Liang Yi		- sep 00, 2027	

Page 2 of 10

F#NPO-P0002E-US1201 DSB0-110U019348

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

Title of Invention:

SEMICONDUCTOR MEMORY DEVICE AND FABRICATION THEREOF

As the below named inventor, I here This declaration is directed to:	by declare that:			
The attached application, or				
☐ United States application nu	mber	_filed o	n,	or
☐ PCT international application	n number	file	d on	
The above-identified application was	made or authorized to be made l	by me.		
I believe that I am the original inventapplication.	or or an original joint inventor of a	claimed	I invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impri	I false statement made in this decisionment of not more than five (5)	claration) years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	lics	having a postal add	ress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu	- City 300, Taiwan,	R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1.0 d valuable consideration.	10), the r	eceipt of which is her	eby
the entire right, title and interest in ar invention as above-identified applica invention by the above application or	I hereby sell, assign and transfer to ASSIGNEE and the successors and assignees of the ASSIGNEE the entire right, title and interest in and to any and all improvements which are disclosed in the invention as above-identified application and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuations, continuation-in-part, divisions, renewals, substitutes, or extensions thereof, and as to Letters Patent any reissue or re-examination thereof.			
I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or encumbran n this assignment;	ice has t	peen or will be made	or
I further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to I and will testify as to the same in any interference, litigation proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal				
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WITNESS WHEREOF, I have her	lication, said invention and said L cessary or desirable to carry out	etters P	atent and said oses thereof.	
Note: An application data sheet (PTC inventive entity, must accompany this	D/SB/14 or equivalent), including of some second of the se	naming t ditional i	the entire nventor.	

Page 3 of 10

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	ZHIGUO LI	Date:	So of sol		
Signature:	(izhiguo		_>ep (ib, 207/		

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202 Page 4 of 10

F#NPO-P0002E-US1201 DSB0-110U019348

PATENT

REEL: 057404 FRAME: 0584

Title of Invention: SEMICONDUCTOR MEMORY DEVICE AND FABRICATION THEREOF

As the below named inventor, I here This declaration is directed to:	by declare that:		
☑ The attached application, or	•		
☐ United States application nu	ımber	filed on	, or
☐ PCT international applicatio	n number	filed on	
The above-identified application was	made or authorized to be made	by me.	
I believe that I am the original invent application.	or or an original joint inventor of a	a claimed invention in	the
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	l false statement made in this de isonment of not more than five (5	claration is punishabl i) years, or both.	le
In consideration of the payment by	UNITED MICROELECTROI	NICS having a po	ostal address of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hs	in-Chu City 300,	Taiwan, R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good ar		00), the receipt of wh	ich is hereby
I hereby sell, assign and transfer to a the entire right, title and interest in a invention as above-identified applica invention by the above application of substitutes, or extensions thereof, an	nd to any and all improvernents v tion and, in and to, all Letters Pa r any continuations, continuation-	vhich are disclosed in tent to be obtained fo in-part, divisions, ren	n the or said newals,
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbrar h this assignment;	nce has been or will b	oe made or
I further covenant that ASSIGNEE wand documents relating to said inverknown and accessible to I and will to related thereto and will promptly exe	ntion and said Letters Patent and estify as to the same in any interfe	legal equivalents as erence, litigation proc	may be
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be no IN WITNESS WHEREOF, I have he	olication, said invention and said ecessary or desirable to carry out	Letters Patent and sa the proposes thereo	f.
Note: An application data sheet (PT0 inventive entity, must accompany this			

Page 5 of 10

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

LEGAL NA	ME OF INVENTOR (ASSIG	NOR)		
Inventor:	CHI REN		Date:	Sep 06.2021
Signature:	CHI	Ren		- Jey Vb, 2021

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202 Page 6 of 10

F#NPO-P0002E-US120I DSB0-110U019348

PATENT

REEL: 057404 FRAME: 0586

Title of Invention:

SEMICONDUCTOR MEMORY DEVICE AND FABRICATION THEREOF

As the below named inventor, I here This declaration is directed to:	by declare that:		
The attached application, or	r		
☐ United States application nu	ımber	filed on,	or
☐ PCT international applicatio	n number	filed on	
The above-identified application was	s made or authorized to be made	b y me.	
I believe that I am the original invent application.	tor or an original joint inventor of a	claimed invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	Il false statement made in this dec risonment of not more than five (5	elaration is punishable) years, or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	NICS having a postal addr	ess of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu City 300, Taiwan,	R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good ar	o I of the sum of One Dollar (\$ 1.0 nd valuable consideration.	0), the receipt of which is her	eby
I hereby sell, assign and transfer to a the entire right, title and interest in a invention as above-identified applica- invention by the above application of substitutes, or extensions thereof, an	nd to any and all improvements w ation and, in and to, all Letters Pat r any continuations, continuation-i	hich are disclosed in the ent to be obtained for said n-part, divisions, renewals,	ΞE
I hereby covenant that no assignmentered into which would conflict with	nt, sale, agreement or encumbran h this assignment;	ce has been or will be made	or
I further covenant that ASSIGNEE wand documents relating to said inverknown and accessible to I and will to related thereto and will promptly exe	ntion and said Letters Patent and estify as to the same in any interfe	legal equivalents as may be rence, litigation proceeding	ts
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be no IN WITNESS WHEREOF, I have he	olication, said invention and said Lecessary or desirable to carry out	etters Patent and said the proposes thereof.	
Note: An application data sheet (PTG inventive entity, must accompany thi	O/SB/14 or equivalent), including is form. Use this form for <u>each ad</u>	naming the entire ditional inventor.	

Page 7 of 10

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

LEGAL NAME OF INVENTOR(ASSIGNOR)							
inventor:	Xiaojuan Gao	Date:	SOD. Oh 202/				
Signature:	Xiao Juan Go	.o	- Sep. 10h, 2021				

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202 Page 8.of 10

F#NPO-P0002E-US1201 DSB0-110U019348

PATENT

REEL: 057404 FRAME: 0588

Title of Invention:

SEMICONDUCTOR MEMORY DEVICE AND FABRICATION THEREOF

As the below named inventor, I hereby declare that: This declaration is directed to:						
The attached application, or	•					
☐ United States application number		filed on,	or			
☐ PCT international application number		filed on				
The above-identified application was made or authorized to be made by me.						
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.						
I hereby acknowledge that any willful false statement made in this declaration is punishable under18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.						
In consideration of the payment by	UNITED MICROELECTRON CORP.	ICS having a postal addre	ess of			
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu City 300, Taiwan,	R.O.C.			
(referred to as "ASSIGNEE"below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, andfor other good and valuable consideration.						
I hereby sell, assign and transfer to ASSIGNEE and the successors and assignees of the ASSIGNEE the entire right, title and interest in and to any and all improvements which are disclosed in the invention as above-identified application and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuations, continuation-in-part, divisions, renewals, substitutes, or extensions thereof, and as to Letters Patent any reissue or re-examination thereof.						
I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;						
I further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to I and will testify as to the same in any interference, litigation proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal						
representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the proposes thereof. IN WITNESS WHEREOF, I have hereunto set hand and seal this on the date(s) indicated.						
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use this form for <u>each additional inventor</u> .						

Page 9 of 10

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

LEGAL NAME OF INVENTOR(ASSIGNOR)						
Inventor:	Boon Keat Toh	Date:	Sep (h >07/			
Signature:	Buon Kauf Tah					

NPO#NAU-P3898-USA:0 CUST#UMCD-2021-0202

RECORDED: 09/07/2021

Page 10 of 10

F#NPO-P0002E-US1201 DSB0-110U019348