504926623 05/22/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4973369

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Tzu-Chieh Chen	05/17/2018
Pin-Hong Chen	05/17/2018
Chih-Chieh Tsai	05/17/2018
Chia-Chen Wu	05/17/2018
Yi-An Huang	05/17/2018
Kai-Jiun Chang	05/17/2018
Tsun-Min Cheng	05/17/2018
Yi-Wei Chen	05/17/2018

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
Name:	FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD.
Street Address:	NO.88, LIANHUA AVENUE, INTEGRATED CIRCUIT SCIENCE PARK, JINJIANG CITY
City:	QUANZHOU CITY, FUJIAN PROVINCE
State/Country:	CHINA

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15986780

CORRESPONDENCE DATA

Fax Number: (703)997-4517

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

PATENT

504926623 REEL: 045877 FRAME: 0285

ATTORNEY DOCKET NUMBER:	NAUP3054USA
NAME OF SUBMITTER:	SIBYL YU
SIGNATURE:	/SIBYL YU/
DATE SIGNED:	05/22/2018
Total Attachments: 16	
source=3157509#page1.tif	
source=3157509#page2.tif	
source=3157509#page3.tif	
source=3157509#page4.tif	
source=3157509#page5.tif	
source=3157509#page6.tif	
source=3157509#page7.tif	
source=3157509#page8.tif	
source=3157509#page9.tif	
source=3157509#page10.tif	
source=3157509#page11.tif	
source=3157509#page12.tif	
source=3157509#page13.tif	
source=3157509#page14.tif	
source=3157509#page15.tif	

source=3157509#page16.tif

PATENT REEL: 045877 FRAME: 0286

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

As the below named inventor, I here	eby declare that:		
This declaration is directed to:	•		
☑ 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 invenapplication.	tor or an original joint inventor of a	a claimed invention in	the
I hereby acknowledge that any willfuunder18 U.S.C. 1001 by fine or important	ul false statement made in this decrisonment of not more than five (5	claration is punishable i) years, or both.	
In consideration of the payment by	UNITED MICROELECTROI	NICS having a pos	stal address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hs	in-Chu City 300, T	aiwan, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, and for other good at	to I of the sum of One Dollar (\$ 1.0 nd valuable consideration.	00), the receipt of whic	ch is hereby
In consideration of the payment by	Fujian Jinhua Integrated C	Circuit having a pos	stal address of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.	grated Circuit Science Park, C.	, Jinjiang City, Qua	anzhou City,
(referred to as "ASSIGNEE"below) t acknowledged, andfor other good ar		00), the receipt of whic	ch 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	and to any and all improvements wation and, in and to, all Letters Pai or any continuations, continuation-	hich are disclosed in tent to be obtained for in-part, divisions, rene	the said wals,
I hereby covenant that no assignme entered into which would conflict wit	nt, sale, agreement or encumbrar th this assignment;	nce has been or will be	e 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 exerting the said inverse was a supplied to th	ntion and said Letters Patent and estify as to the same in any interfe	legal equivalents as merence, litigation proce	nav be

Page 1 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 WAY 1 7 2018 (Date of signing)

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>

LEGAL N	AME OF INVENTOR(ASSIG	aa48		
Inventor:	Tzu-Chieh Chen		Date:	MAY 1 7 2018
Signature:	7 Tzu-Chieh	Chen	·	

Page 2 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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 o	on	_, or
☐ PCT international applicatio	n number	file	d 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 inv	entor of a claime	d invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	I false statement made isonment of not more th	n this declaratior an five (5) years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELI	ECTRONICS	having a postal ad	dress of
No.3, Li-Hsin Road 2, Science	-Based Industrial P	ark, Hsin-Chu	City 300, Taiwai	n, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Do nd valuable consideration	llar (\$ 1.00), the	receipt of which is h	ereby
In consideration of the payment by	Fujian Jinhua Inteç Co., Ltd.	rated Circuit	having a postal ad	dress of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.C	rated Circuit Scienc	e Park, Jinjia	ng City, Quanzho	ou City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Do ad valuable consideration	llar (\$ 1.00), the n.	receipt of which is ho	ereby
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified applica invention by the above application or substitutes, or extensions thereof, ar	nd to any and all improvition and, in and to, all Linary continuations, confinuations, confinuat	ements which are etters Patent to b inuation-in-part.	e disclosed in the e obtained for said divisions, renewals.	
I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or en n this assignment;	ncumbrance has	been or will be made	e or
I further covenant that ASSIGNEE w and documents relating to said inven known and accessible to I and will te related thereto and will promptly exer	ntion and said Letters Pa estify as to the same in a	tent and legal eq ny interference, l	uivalents as may be itigation proceeding	cts

Page 3 of 16

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 MAY 1.7 2018 (Date of signing)

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>.

EGAL NAME OF INVENTOR(ASSIGNOR)							
Inventor:	Pin-Hong Che	1	Date:	MAY	172	2018	
Signature:	2 Pm-Hay	Ohen					

Page 4 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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
			d on	
The above-identified application was	made or authorized to be made			
I believe that I am the original inventor application.	or or an original joint inventor of a	claimed	d invention in the	
I hereby acknowledge that any willful under18 U.S.C. 1001 by fine or impri	false statement made in this decisions and false statement of not more than five (5	claration) years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	NICS	having a postal a	ddress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu	City 300, Taiwa	ın, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an		00), the r	eceipt of which is I	nereby
	Fujian Jinhua Integrated C Co., Ltd.	ircuit	having a postal ad	ddress of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.C	rated Circuit Science Park, 3.	Jinjiar	ng City, Quanzh	ou City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an		00), the r	eceipt of which is h	nereby
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified application or substitutes, or extensions thereof, an	nd to any and all improvements w tion and, in and to, all Letters Pat any continuations, continuation-i	hich are ent to be in-part, c	disclosed in the obtained for said divisions, renewals.	
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbran n this assignment;	ice has t	peen or will be mad	de or
I further covenant that ASSIGNEE wi and documents relating to said inven known and accessible to I and will te related thereto and will promptly exec	tion and said Letters Patent and stify as to the same in any interfe	legal eq rence, li	uivalents as may b tigation proceeding	е

Page 5 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 MAY 1.7 2018 (Date of signing)

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>

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Chih-Chìeh Tsai	Date:	MAY 1 7 2018		
Signature:) Chih - Chieh	Trai			

Page 6 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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		d on	
The above-identified application was	made or authorized to be made I			, , , , , , , , , , , , , , , , , , ,
I believe that I am the original inventorapplication.	or or an original joint inventor of a	claime	d invention in the	•
I hereby acknowledge that any willful under18 U.S.C. 1001 by fine or impri	false statement made in this dec sonment of not more than five (5)	laration years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	IICS	having a postal	address of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu	City 300, Taiv	van, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	l of the sum of One Dollar (\$ 1.0 d valuable consideration.	0), the r	eceipt of which is	s hereby
	Fujian Jinhua Integrated C Co., Ltd.	ircuit	having a postal	address of
No.88, Lianhua Avenue, Integr Fujian Province 362200, P.R.C	rated Circuit Science Park,	Jinjiar	ng City, Quanz	zhou City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good and	l of the sum of One Dollar (\$ 1.0 d valuable consideration.	0), the r	eceipt of which is	s hereby
I hereby sell, assign and transfer to A the entire right, title and interest in an invention as above-identified application or substitutes, or extensions thereof, an	d to any and all improvements wi ion and, in and to, all Letters Pate any continuations, continuation-i	hich are ent to be n-part, c	disclosed in the obtained for sai livisions, renewa	id Is
I hereby covenant that no assignmen entered into which would conflict with	t, sale, agreement or encumbrand this assignment;	ce has t	peen or will be m	ade or
I further covenant that ASSIGNEE wi and documents relating to said inven- known and accessible to I and will tes related thereto and will promptly exec	tion and said Letters Patent and le stify as to the same in any interfer	egal equ rence. Ii	uivalents as may	be

Page 7 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 MAY 1 7 2018 (Date of signing)

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>

LEGAL NAME OF INVENTOR(ASSIGNOR)						
Inventor:	Chia-Chen Wu		Date:	MAY	1 7 2018	
Signature:	Chia-Chen	Wu				

Page 8 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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	by me.		
I believe that I am the original invente application.	or or an original joint inventor of	a claime	d invention in the	
I hereby acknowledge that any willful under18 U.S.C. 1001 by fine or impri	false statement made in this de isonment of not more than five (5	eclaration 5) years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRO CORP.	NICS	having a postal ad	ddress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hs	in-Chu	City 300, Taiwa	n, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1. d valuable consideration.	00), the	receipt of which is h	nereby
	Fujian Jinhua Integrated (Co., Ltd.	Circuit	having a postal ac	ddress of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.C		, Jinjiaı	ng City, Quanzh	ou City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1. d valuable consideration.	00), the	receipt of which is h	nereby
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified applica- invention by the above application or substitutes, or extensions thereof, ar	nd to any and all improvements watton and, in and to, all Letters Parant continuations, continuations	which are stent to be -in-part, o	e disclosed in the e obtained for said divisions, renewals,	
I hereby covenant that no assignmer entered into which would conflict with		nce has	been or will be mad	le or
I further covenant that ASSIGNEE w and documents relating to said inven- known and accessible to I and will te related thereto and will promptly exer-	tion and said Letters Patent and stify as to the same in any interf	l legal eq erence, l	uivalents as may be itigation proceeding	е

Page 9 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 __MAY _1 _7 _2018 __(Date of signing)

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>

LEGAL NAME OF INVENTOR(ASSIGNOR)		
Inventor: Yi-An Huang	Date:	MAY 1 7 2018
Signature: 71-An Huang		

Page 10 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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 o	n	, or
☐ PCT international application	n number	file	d 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	d invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr				
In consideration of the payment by	UNITED MICROELECTRON	NICS	having a postal add _	ress 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 i	receipt of which is he	reby
In consideration of the payment by	Fujian Jinhua Integrated C Co., Ltd.	ircuit	having a postal add	ress of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.0		Jinjiai	ng City, Quanzho	u City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good ar	o I of the sum of One Dollar (\$ 1.0 nd valuable consideration.	00), the i	receipt of which is he	reby
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 o substitutes, or extensions thereof, an	nd to any and all improvements w ntion and, in and to, all Letters Pai r any continuations, continuation-	/hich are tent to b in-part, o	e disclosed in the e obtained for said divisions, renewals,	EE
I hereby covenant that no assignme entered into which would conflict wit		nce 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 eq erence, l	uivalents as may be itigation proceeding	ets

Page 11 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 MAY 1 7 2018 (Date of signing)

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>

LEGAL NA	ME OF INVENTOR(ASSIGN	IOR)			
Inventor:	Kai-Jiun Chang		Date:	MAY 1	7 2018
Signature:	9 Kai-Jiun	chang			
		F			

Page 12 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

As the below named inventor, I here	by declare that			
This declaration is directed to:	by deciare mat.			
☑ The attached application, or	•			
☐ United States application nu	ımber	_filed o	n, oi	٢
☐ PCT international applicatio	n number		d on	
The above-identified application was	s made or authorized to be made I	by me.		_
I believe that I am the original invent application.	or 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	I false statement made in this dec isonment of not more than five (5)	claration) years, o	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	NICS	having a postal addres	s 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 and valuable consideration.	00), the re	eceipt of which is hereb	у
In consideration of the payment by	Fujian Jinhua Integrated C	ircuit	having a postal addres	s of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.C	rated Circuit Science Park, C.	Jinjian	g City, Quanzhou C	City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1.0 and valuable consideration.	0), the re	eceipt of which is hereb	у
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified applica invention by the above application or substitutes, or extensions thereof, ar	nd to any and all improvements wi tion and, in and to, all Letters Pate any continuations, continuation-in	hich are ent to be n-part. d	disclosed in the obtained for said ivisions, renewals	
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbrand n this assignment;	ce has b	een or will be made or	
I further covenant that ASSIGNEE w and documents relating to said inven known and accessible to I and will te related thereto and will promptly exec	ition and said Letters Patent and le stify as to the same in any interfer	egal equ rence. lit	iivalents as may be	

Page 13 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 MAY 1 7 2018 (Date of signing)

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>.

LEGAL NA	ME OF INVENTOR(ASSIGNOR)		
Inventor:	Tsun-Min Cheng	Date:	MAY 1 7 2018
Signature:	> Trun-Min Che	. Mg=	
		\mathcal{A}	

Page 14 of 16

Title of Invention: SEMICONDUCTOR MEMORY DEVICE

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 o	n	, or
☐ PCT international applicatio	n number	file	d on	
The above-identified application was	s made or authorized to be made l	by me.		
I believe that I am the original invent application.	or or an original joint inventor of a	a claimed	d invention in the)
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	I false statement made in this dec isonment of not more than five (5)	claration) years,	is punishable or both.	
In consideration of the payment by	UNITED MICROELECTRON CORP.	NICS	having a postal	address of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu	City 300, Tai	wan, 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.	00), the r	eceipt of which i	s hereby
In consideration of the payment by	Fujian Jinhua Integrated C Co., Ltd.	ircuit	having a postal	address of
No.88, Lianhua Avenue, Integ Fujian Province 362200, P.R.C	rated Circuit Science Park,	Jinjiar	ng City, Quan	zhou City,
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1.0 and valuable consideration.	00), the r	eceipt of which i	s hereby
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;	ce has b	peen or will be m	ade or
I further covenant that ASSIGNEE w and documents relating to said inven- known and accessible to I and will te related thereto and will promptly exe-	ition and said Letters Patent and I stify as to the same in any interfe	legal equ rence. li	uivalents as may tigation proceedi	be

Page 15 of 16

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018

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 WAY 1 7 2018 (Date of signing)

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>

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Yi-Wei Chen	Date:	MAY	17	2018
Signature:	Ti-Weichen				

NPO#NAU-P3054-USA:0 CUST#UMCF-2017-0018 Page 16 of 16

F#NPO-P0002E-US1201 DSB0-106U037060

PATENT REEL: 045877 FRAME: 0302

RECORDED: 05/22/2018