### 503784738 04/14/2016

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3831384

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
Fu-Cheng Yen	04/08/2016
Tsung-Mu Yang	04/08/2016
Sheng-Hsu Liu	04/08/2016
Tsang-Hsuan Wang	04/08/2016
Chun-Liang Kuo	04/08/2016
Yu-Ming Hsu	04/08/2016
Chung-Min Tsai	04/08/2016
Yi-Wei Chen	04/08/2016

#### **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:	15099581

### **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: P.O.BOX 506

Address Line 4: MERRIFIELD, VIRGINIA 22116

ATTORNEY DOCKET NUMBER:	NAUP2703USA
NAME OF SUBMITTER:	KATE YEH
SIGNATURE:	/KATE YEH/
DATE SIGNED:	04/14/2016

PATENT REEL: 038288 FRAME: 0714

Total Attachments: 16	
source=2534368#page1.tif	
source=2534368#page2.tif	
source=2534368#page3.tif	
source=2534368#page4.tif	
source=2534368#page5.tif	
source=2534368#page6.tif	
source=2534368#page7.tif	
source=2534368#page8.tif	
source=2534368#page9.tif	
source=2534368#page10.tif	
source=2534368#page11.tif	
source=2534368#page12.tif	
source=2534368#page13.tif	
source=2534368#page14.tif	
source=2534368#page15.tif	
source=2534368#page16.tif	

PATENT REEL: 038288 FRAME: 0715

### Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR 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 on	, or
☐ PCT international application	n number	filed on	
The above-identified application was	s 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 claimed 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 MICROELECTRO	NICS having a pos	stal address of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hs	in-Chu City 300, T	aiwan, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an		00), the receipt of whic	ch 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 or substitutes, or extensions thereof, ar	nd to any and all improvements wation and, in and to, all Letters Par r any continuations, continuation-	which are disclosed in the tobe the discount to be obtained for in-part, divisions, rene	the · said ewals,
I hereby covenant that no assignmer entered into which would conflict with		nce has been or will be	e made or
I further covenant that ASSIGNEE wand documents relating to said inver known and accessible to I and will te related thereto and will promptly exe	ntion and said Letters Patent and estify as to the same in any interfe	legal equivalents as nerence, litigation proce	nay be
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be ne IN WINTNESS WHEREOF, I have h	olication, said invention and said ecessary or desirable to carry out	Letters Patent and said the proposes thereof.	
Note: An application data sheet (PTC			

Page 1 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

Fu-Cheng Yen

Date:

APR 0 8 2016

Signature:

Page 2 of 16

F#NPO-P0002E-US1201 DSB0-105U005568

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

### Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR 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	on	, or
☐ PCT international application	n number	file	ed on	
The above-identified application was	s made or authorized to	o be made by me.		
I believe that I am the original invent application.	tor or an original joint i	าventor of a claime	d invention in the	е
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr				
In consideration of the payment by	UNITED MICROE CORP.	LECTRONICS	having a posta	l address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial	Park, Hsin-Chu	ı City 300, Tai	wan, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good ar			receipt of which	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 impro ation and, in and to, all r any continuations, co	ovements which are Letters Patent to b Intinuation-in-part,	e disclosed in the be obtained for sa divisions, renewa	e aid als,
I hereby covenant that no assignment entered into which would conflict with		encumbrance has	been or will be r	nade or
I further covenant that ASSIGNEE wand documents relating to said inver known and accessible to I and will to related thereto and will promptly exe	ntion and said Letters I estify as to the same in	Patent and legal ed any interference,	quivalents as ma litigation proceed	y be
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be no IN WINTNESS WHEREOF, I have h	olication, said inventior ecessary or desirable t	n and said Letters i o carry out the pro	Patent and said poses thereof.	ate of signing)
Note: An application data sheet (PTo inventive entity, must accompany thi				

Page 3 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAI	VIE OF INVENTOR(ASS	GNUR)	
Inventor:	Tsung-Mu Yang	Date:	APR 0 8 2016
Signature:	Tsung-Mu	Tury.	

Page 4 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887 F#NPO-P0002E-US1201 DSB0-105U005568

PATENT

## Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I hereby declare the This declaration is directed to:	at:	
☑ The attached application, or		
☐ United States application number	filed on	, or
☐ PCT international application number _	filed on	:
The above-identified application was made or aut	horized to be made by me.	
I believe that I am the original inventor or an origi application.	nal joint inventor of a claimed inve	ention in the
I hereby acknowledge that any willful false statem under18 U.S.C. 1001 by fine or imprisonment of r	nent made in this declaration is punot more than five (5) years, or bo	unishable vth.
In consideration of the payment by CORP.	IICROELECTRONICS hav	ring a postal address of
No.3, Li-Hsin Road 2, Science-Based Inc	dustrial Park, Hsin-Chu City	/ 300, Taiwan, R.O.C.
(referred to as "ASSIGNEE"below) to I of the surr acknowledged, andfor other good and valuable of		ot of which is hereby
I hereby sell, assign and transfer to ASSIGNEE a the entire right, title and interest in and to any and invention as above-identified application and, in a invention by the above application or any continu- substitutes, or extensions thereof, and as to Lette	I all improvements which are disc nd to, all Letters Patent to be obt ations, continuation-in-part, division	losed in the ained for said ons, renewals,
I hereby covenant that no assignment, sale, agreentered into which would conflict with this assignr	ement or encumbrance has been nent;	or will be made or
I further covenant that ASSIGNEE will, upon its re and documents relating to said invention and said known and accessible to I and will testify as to the related thereto and will promptly execute and deli	Letters Patent and legal equivale e same in any interference, litigati	ents as may be
representatives any and all papers, instruments of maintain, issue and enforce said application, said equivalents thereof which may be necessary or d IN WINTNESS WHEREOF, I have hereunto set h	invention and said Letters Paten esirable to carry out the proposes	t and said s thereof.
Note: An application data sheet (PTO/SB/14 or equipmentive entity, must accompany this form. Use t		

Page 5 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

Sheng-Hsu Liu

Date:

APR 0 8 2016

Signature:

Sheng-Mru Sru

Page 6 of 16

F#NPO-P0002E-US1201 DSB0-105U005568

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

> PATENT REEL: 038288 FRAME: 0721

# Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I here This declaration is directed to:	eby declare that:		
☑ The attached application, or			
☐ United States application nu	ımber	filed on	, or
☐ PCT international application	n 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	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 isonment of not more than five (5	claration is punishable ) years, or both.	
In consideration of the payment by	UNITED MICROELECTRON	NICS having a postal add	lress of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hsi	in-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		
I hereby sell, assign and transfer to a the entire right, title and interest in an invention as above-identified applica invention by the above 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	rhich are disclosed in the ent to be obtained for said	EE
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbran n this assignment;	ce has been 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 WINTNESS WHEREOF, I have he	lication, said invention and said L cessary or desirable to carry out t	etters Patent and said the proposes thereof.	f signing)
Note: An application data sheet (PTC inventive entity, must accompany this	D/SB/14 or equivalent), including r s form. Use this form for <u>each adc</u>	naming the entire litional inventor.	

Page 7 of 16

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

Tsang-Hsuan Wang

Date:

APR 0 8 2015

Signature:

Way, Tsong-Hs

Page 8 of 16

F#NPO-P0002E-US1201 DSB0-105U005568

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

PATENT

## Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I here This declaration is directed to:	eby declare that:		
☑ The attached application, or			
☐ United States application nu	ımber	filed on	, or
☐ PCT international application	n number	filed on	
The above-identified application was	s made or authorized to be made	by me.	
l believe that I am the original invent application.	tor or an original joint inventor of a	a claimed invention in the	
l hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	ll false statement made in this der isonment of not more than five (5	claration is punishable ) years, or both.	
In consideration of the payment by	UNITED MICROELECTROI CORP.	NICS having a postal add	dress of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hs	in-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.	00), the receipt of which is he	ereby
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 or substitutes, or extensions thereof, ar	nd to any and all improvements w tion and, in and to, all Letters Pat r any continuations, continuation-	rhich are disclosed in the tent to be obtained for said in-part, divisions, renewals.	IEE
hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or encumbrar h this assignment;	ice has been or will be made	or
further covenant that ASSIGNEE wand documents relating to said invention on and accessible to I and will terelated thereto and will promptly exercise.	ntion and said Letters Patent and estify as to the same in any interfe	legal equivalents as may be rence. litigation proceeding	ets
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne N WINTNESS WHEREOF, I have he	plication, said invention and said Lecessary or desirable to carry out	etters Patent and said the proposes thereof.	of signing)
Note: An application data sheet (PTC	D/SB/14 or equivalent), including	naming the entire	

Page 9 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: Chun-Liang Kuo

Date: APR 0 8 2016

Signature: Chun - Liang Kuo.

Page 10 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887 F#NPO-P0002E-US1201 DSB0-105U005568

PATENT

## Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I here This declaration is directed to:	by declare that:		
☑ The attached application, or			
☐ United States application nu	filed on	, or	
☐ PCT international application	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	I false statement made in this decisionment of not more than five (5	claration is punishable ) years, or both.	
In consideration of the payment by	UNITED MICROELECTROI	NICS having a postal add	iress 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 an	o I of the sum of One Dollar (\$ 1.0 d valuable consideration.	00), the receipt of which is he	reby
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, an	nd to any and all improvements w tion and, in and to, all Letters Pat any continuations, continuation-	rhich are disclosed in the ent to be obtained for said in-part, divisions, renewals.	IEE
I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or encumbrar n this assignment;	ice has been or will be made	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 equivalents as may be rence. litigation proceeding	ts .
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WINTNESS WHEREOF, I have he	lication, said invention and said L cessary or desirable to carry out	etters Patent and said the proposes thereof.	of signing)
Note: An application data sheet (PTC			

Page 11 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NA	ME OF INVENTOR(ASSIGNOR)		
Inventor	Yu-Ming Hsu	Date:	APR 0 8 2016
Signature:	Mu Mins	1-4	
		•	

Page 12 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887 F#NPO-P0002E-US1201 DSB0-105U005568

## Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I here This declaration is directed to:	eby declare that:	•	
☑ The attached application, or			
☐ United States application nu	filed on	, or	
☐ PCT international application	n number	filed on	
The above-identified application was	s made or authorized to be made	by me.	
I believe that I am the original invent application.	tor 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	Il false statement made in this decisionment of not more than five (5	claration is punishable ) years, or both.	
In consideration of the payment by	UNITED MICROELECTROICORP.	NICS having a postal add	ress of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hs	in-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.	00), the 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 or substitutes, or extensions thereof, ar	nd to any and all improvements w tion and, in and to, all Letters Pat r any continuations, continuation-	which are disclosed in the tent to be obtained for said in-part, divisions, renewals.	EE
I hereby covenant that no assignmer entered into which would conflict witl	nt, sale, agreement or encumbrar h this assignment;	nce has been or will be made	or
I further covenant that ASSIGNEE wand documents relating to said inver known and accessible to I and will te 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 ne IN WINTNESS WHEREOF, I have h	olication, said invention and said lecessary or desirable to carry out	etters Patent and said the proposes thereof.	of signing)
Note: An application data sheet (PTC	D/SB/14 or equivalent), including s form. Use this form for each ad-	naming the entire	

Page 13 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAME OF INVENTOR(ASSIGNOR)						
Inventor:	Chung-Min Tsai	Date:	APR		-	2016
Signature:	Chury Min	Trui				

Page 14 of

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887 F#NPO-P0002E-US1201 DSB0-105U005568

**PATENT** 

## Title of Invention: METHOD FOR FABRICATING SEMICONDUCTOR DEVICE

As the below named inventor, I hereby declaration is directed to:	re that:		
☑ The attached application, or			
☐ United States application number	f	iled on	, or
☐ PCT international application number	er	filed on	PRINTER STANDARD COLOR
The above-identified application was made o	r authorized to be made by	me.	
I believe that I am the original inventor or an application.	original joint inventor of a c	laimed invention in th	е
I hereby acknowledge that any willful false st under18 U.S.C. 1001 by fine or imprisonmen	atement made in this decla t of not more than five (5) y	ration is punishable ears, or both.	
In consideration of the payment by UNITE CORP.		CS having a posta	ıl address of
No.3, Li-Hsin Road 2, Science-Based	Industrial Park, Hsin	 Chu City 300, Tai	wan, R.O.C.
(referred to as "ASSIGNEE" below) to I of the acknowledged, andfor other good and valuab	sum of One Dollar (\$ 1.00) le consideration.	, the receipt of which	is hereby
I hereby sell, assign and transfer to ASSIGNE the entire right, title and interest in and to any invention as above-identified application and, invention by the above application or any con substitutes, or extensions thereof, and as to L	and all improvements which in and to, all Letters Paten tinuations, continuation-in-	ch are disclosed in the it to be obtained for sa part, divisions, renewa	e aid als
I hereby covenant that no assignment, sale, a entered into which would conflict with this ass	greement or encumbrance ignment;	has been or will be n	nade or
I further covenant that ASSIGNEE will, upon i and documents relating to said invention and known and accessible to I and will testify as to related thereto and will promptly execute and	said Letters Patent and lego the same in any interferen	gal equivalents as may	v he
representatives any and all papers, instrumer maintain, issue and enforce said application, equivalents thereof which may be necessary IN WINTNESS WHEREOF, I have hereunto s	said invention and said Let or desirable to carry out the	ters Patent and said proposes thereof.	ate of signing)
Note: An application data sheet (PTO/SB/14 oinventive entity, must accompany this form. U	or equivalent), including na se this form for <u>each additi</u>	ming the entire onal inventor.	

Page 15 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887

LEGAL NAME OF INVENTOR(ASSIGNOR)							
Inventor:	Yi-Wei Chen					2016	
Signature:	'(i-Wei	chen.					

Page 16 of 16

NPO#NAU-P2703-USA:0 CUST#UMCD-2015-0887 F#NPO-P0002E-US1201 DSB0-105U005568

**PATENT**