### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2776431

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
Yi-Shan Chiu	12/31/2013
Shen-De Wang	12/31/2013
ZHEN CHEN	12/31/2013
Yuan-Hsiang Chang	12/31/2013
Chih-Chien Chang	12/31/2013
JIANJUN YANG	12/31/2013
Wei Ta	12/31/2013

### **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:	14220122

### **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 via

US Mail.

**Phone:** 3027291562

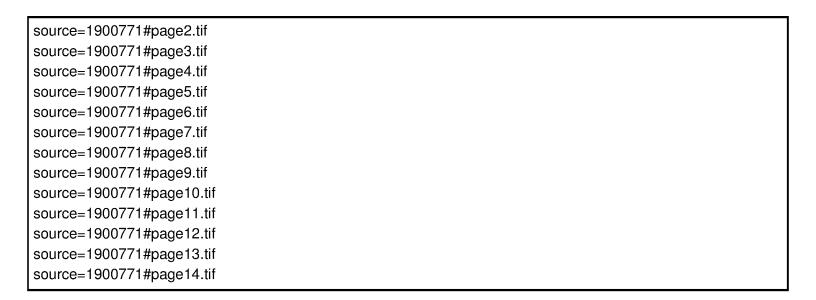
Email: Patent.admin.uspto.cr@naipo.com

Correspondent Name: WINSTON HSU Address Line 1: P.O.BOX 506

Address Line 4: MERRIFIELD, VIRGINIA 22116

ATTORNEY DOCKET NUMBER:	NAUP2148USA
NAME OF SUBMITTER:	KATE YEH
SIGNATURE:	/KATE YEH/
DATE SIGNED:	03/19/2014

**Total Attachments: 14** source=1900771#page1.tif



memory Cell and Manufactur	ing Method Thereof		
As the below named inventor, I here This declaration is directed to:	eby 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	e by me.	
I believe that I am the original inventapplication	tor or an original joint inventor of	a claimed inve	ntion in the
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	ll false statement made in this de isonment of not more than five (	eclaration is pur 5) years, or bot	nishable h.
In consideration of the payment by	UNITED MICROELECTRO	NICS havir	ng a postal address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial Park, Hs	sin-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. nd valuable consideration.	.00), the 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, ar	nd to any and all improvements of tion and, in and to, all Letters Pa r any continuations, continuation and as to Letters Patent any reisso	which are disclo atent to be obtai ⊢in-part, divisior ue or re-examin	osed in the ined for said ns, renewals, nation thereof.
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encumbra n this assignment;	ince has been o	r will be made or
I further covenant that ASSIGNEE w and documents relating to said inver known and accessible to I and will te related thereto and will promptly exe	ition and said Letters Patent and stify as to the same in any interf	l legal equivaler erence, litigation	nts as may be
representatives any and all papers, is maintain, issue and enforce said app equivalents thereof which may be no IN WINTNESS WHEREOF, I have he	lication, said invention and said	Letters Patent a	and said hereof.

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use this form for each additional inventor.

Page 1 of 14

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

Title of Invention:

F#NPO-P0002E-US1201 DSC0-102U012844

DEC 3 1 2013 (Date of signing)

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Yi-Shan Ch	iu		Date:	20131231
Signature:	<u> </u>	shan_	Chira		

Page 2 of 14

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390 F#NPO-P0002E-US1201 DSC0-102U012844

Title of Invention:	
Memory Cell and Manufacturing Method	Thereof

As the below named inventor, I here This declaration is directed to:	eby declare that:			
☑ The attached application, or	r			
☐ United States application nu	umber	filed	on	, or
☐ PCT international applicatio	n number	file	ed 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 i	nventor of a claime	ed invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or imp	ul false statement mad risonment of not more	e in this declaration than five (5) years	n is punishable , or both.	
In consideration of the payment by	UNITED MICROE CORP.	LECTRONICS	having a postal	address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial	Park, Hsin-Chu	– ı City 300, Taiw	van, R.O.C.
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good are	o I of the sum of One I nd valuable considerat	Dollar (\$ 1.00), the ion.	receipt of which is	s 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 ition and, in and to, all r anv continuations. co	ovements which are Letters Patent to b entinuation-in-part	e disclosed in the e obtained for said divisions, renewal	d
l hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or h this assignment;	encumbrance has	been or will be ma	ade 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 I estify as to the same in	Patent and legal ed any interference I	uivalents as may	he
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 inventior ecessary or desirable t	and said Letters For carry out the prop	Patent and said poses thereof.	te of signing)
Note: An application data sheet (PTC nventive entity, must accompany this	D/SB/14 or equivalent) s form. Use this form f	, including naming or <u>each additi</u> onal i	the entire	

Page 3 of 14

LEGAL NA	ME OF INVENTOR(ASSIGNOR)		
Inventor:	Shen-De Wang	Date:	2013/12/31
Signature:	Shen De Wong	TATUSTI DIAGRAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA MANAMANIA	

Page 4 of 14

F#NPO-P0002E-US1201 DSC0-102U012844

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

# Title of Invention: Memory Cell and Manufacturing Method 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 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 impri	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 MICROELECTRON CORP.	IICS having a postal add	iress 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		
I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified applicat invention by the above application or substitutes, or extensions thereof, an	nd to any and all improvements whition and, in and to, all Letters Pate any continuations, continuation-in	hich are disclosed in the ent to be obtained for said	EE
l hereby covenant that no assignmen entered into which would conflict with	nt, sale, agreement or encumbrand n this assignment;	ce 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 tes related thereto and will promptly exec	tion and said Letters Patent and lo stify as to the same in any interfer	egal equivalents as may be	ts
representatives any and all papers, ir maintain, issue and enforce said appl equivalents thereof which may be ned IN WINTNESS WHEREOF, I have he	lication, said invention and said Locessary or desirable to carry out t	etters Patent and said he proposes thereof.	f signing)
Note: An application data sheet (PTO inventive entity, must accompany this	n/SB/14 or equivalent), including n s form. Use this form for <u>each add</u>	aming the entire	

Page 5 of 14

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	ZHEN CHEN		Date:	2013/12/31	
Signature:	Zhen_	Chen			

Page 6 of 14

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

F#NPO-P0002E-US1201 DSC0-102U012844

Title of Invention:			
<b>Memory Cell and</b>	Manufacturing	Method	Thereof

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.	NA Astronomy
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 punishable ) years, or both.	
In consideration of the payment by	UNITED MICROELECTROICORP.	NICS having a postal add	dress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hs	 in-Chu City 300, Taiwar	ı, 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 r any continuations, continuation-	which are disclosed in the tent to be obtained for said in-part, divisions, renewals	IEE
l hereby covenant that no assignmer 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 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 l stifv as to the same in any interfe	legal equivalents as may be rence litigation proceeding	xts
representatives any and all papers, ir maintain, issue and enforce said app equivalents thereof which may be ne N 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 nventive entity, must accompany this	D/SB/14 or equivalent), including is form. Use this form for <u>each add</u>	naming the entire ditional inventor.	

Page 7 of 14

F#NPO-P0002E-US1201

LEGAL NA	ME OF INVENTOR(ASSIGNOR)		
Inventor:	Yuan-Hsiang Chang	Date:	2013,12,31
Signature:	Yuan Hsiang Chang		

Page 8 of 14

Memory Cell and Manufactur	ring Method Thereof		
As the below named inventor, I here This declaration is directed to:	eby declare that:		
☑ The attached application, or	r		
☐ United States application no	umber	filed on	. or
☐ PCT international applicatio	n number	filed on	, , , , , , , , , , , , , , , , , , , ,
The above-identified application wa	s made or authorized to be made		
I believe that I am the original inven 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	ul false statement made in this de risonment of not more than five (5	claration is punisha ) years, or both.	ble
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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 are	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 a invention as above-identified applica invention by the above application of substitutes, or extensions thereof, ar	nd to any and all improvements w Ition and, in and to, all Letters Pat r any continuations, continuations	hich are disclosed in ent to be obtained to property divisions, re-	n the for said
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 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 l	egal equivalents as	may ha
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WINTNESS WHEREOF, I have he	nstruments or affidavits required t dication, said invention and said L	o apply for, obtain,	aid vf. (Date of signing)
Note: An application data sheet (PTC inventive entity, must accompany this	D/SB/1 <b>4</b> or equivalent), including r s form. Use this form for <u>each a</u> dd	naming the entire litional inventor.	

Page 9 of 14

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

Title of Invention:

LEGAL NAI	ME OF INVENTOR (ASSIG	NOR)	
Inventor:	Chih-Chien Chang	Date:	2013/12/31
Signature:	Ohih Chien	Chang	

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NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390 F#NPO-P0002E-US1201 DSC0-102U012844

Memory Cell and Manufactur	ing Method Thereof		
As the below named inventor, I here This declaration is directed to:	eby 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.	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	l false statement made in this de isonment of not more than five (5	claration is punishable i) years, or both.	
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(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	I of the sum of One Dollar (\$ 1.0		
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 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	ots
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 WINTNESS WHEREOF, I have hereunto set hand and seal this DEC 3 1 2013 (Date of signing)			

Page 11 of 14

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>.

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

Title of Invention:

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

JIANJUN YANG

Date:

2013-12-31

Signature:

Yang Thantan

Page 12 of 14

F#NPO-P0002E-US1201 DSC0-102U012844

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

Memory Cell and Manufactur	ring Method Thereof		
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
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The above-identified application was	s made or authorized to be mad	***************************************	***************************************
I believe that I am the original invent application.	tor or an original joint inventor o	f a claimed invention in the	
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(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One Dollar (\$ 1		
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entered into which would conflict with	nt, sale, agreement or encumbra nthis assignment;	ince 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 tee related thereto and will promptly exec	tion and said Letters Patent and stify as to the same in any interi	d legal equivalents as may be	nts
representatives any and all papers, ir maintain, issue and enforce said appl equivalents thereof which may be nee IN WINTNESS WHEREOF, I have he	lication, said invention and said	Letters Patent and said the proposes thereof.	of signing
Note: An application data sheet (PTO	0/SB/14 or equivalent), including	naming the entire	

Page 13 of 14

inventive entity, must accompany this form. Use this form for each additional inventor.

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

Title of Invention:

LEGAL NAME OF INVENTOR(ASSIGNOR)			
Inventor:	Wei Ta	Date:	31/12/2013
Signature:	<u>Ja Wei</u>	-	

Page 14 of 14

F#NPO-P0002E-US1201 DSC0-102U012844

NPO#NAU-P2148-USA:0 CUST#UMCD-2013-0390

**RECORDED: 03/19/2014**