505302752 01/29/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5349531

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Hui-Lin Wang	01/24/2019
Yi-Wei Tseng	01/24/2019
Meng-Jun Wang	01/24/2019
Chen-Yi Weng	01/24/2019
Chin-Yang Hsieh	01/24/2019
Jing-Yin Jhang	01/24/2019
Yu-Ping Wang	01/24/2019
Chien-Ting Lin	01/24/2019
Ying-Cheng Liu	01/24/2019
Yi-An Shih	01/24/2019
Yi-Hui Lee	01/24/2019
I-Ming Tseng	01/24/2019

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:	16261524

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.

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

Correspondent Name: WINSTON HSU

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Address Line 4: NEW TAIPEI CITY, TAIWAN

PATENT REEL: 048181 FRAME: 0761

505302752

ATTORNEY DOCKET NUMBER:	NAUP3417USA
NAME OF SUBMITTER:	KATE YEH
SIGNATURE:	/KATE YEH/
DATE SIGNED:	01/29/2019
Total Attachments: 24	
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> PATENT REEL: 048181 FRAME: 0762

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

As the below named inventor, I hereby This declaration is directed to:	by declare that:			
☑ The attached application, or				
☐ United States application nur	mber	filed on	, or	
☐ PCT international application	number	filed on		
The above-identified application was	made or authorized to be made b	y me.		
I believe that I am the original inventor application.	or or an original joint inventor of a	claimed invention in the		
I hereby acknowledge that any willful under18 U.S.C. 1001 by fine or impris	false statement made in this decl sonment of not more than five (5)	aration is punishable years, or both.		
	UNITED MICROELECTRON CORP.	ICS having a postal add	dress of	
No.3, Li-Hsin Road 2, Science-	Based Industrial Park, Hsir	ı-Chu City 300, Taiwar	n, R.O.C	
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good and	l of the sum of One Dollar (\$ 1.00 d valuable consideration.)), the receipt of which is he	ereby	
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, and	d to any and all improvements wh ion and, in and to, all Letters Pate any continuations, continuation-ir	ich are disclosed in the ent to be obtained for said	IEE	
I hereby covenant that no assignment entered into which would conflict with	t, sale, agreement or encumbrand this assignment;	e 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				
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Note: An application data sheet (PTO inventive entity, must accompany this	/SB/14 or equivalent), including n form. Use this form for <u>each addi</u>	aming the entire tional inventor.		

Page 1 of 24

LEGAL NA	WIE OF INVENTOR(ASSIGNOR)			
Inventor:	Hui-Lin Wang	Date:	JAN 2 4 2019	
Signature:	July			_

Page 2 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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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 of substitutes, or extensions thereof, ar	nd to any and all improvition and, in and to, all L r any continuations, cor	vements which are Letters Patent to b ntinuation-in-part.	e disclosed in the e obtained for sai divisions, renewa	id als
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Page 3 of 24

LEGAL NA	ME OF INVEN	NTOR(ASSIG	NOR)			
Inventor:	Yi-Wei Ts	eng		Date:	JAN 2 4 2019	
Signature:	<u>li</u>	Wei	7 seng			

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574 Page 4 of 24

Title of Invention:

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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 a stify as to the same in any int	and legal equivaler	nts as may he
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 sacessary or desirable to carry	aid Letters Patent	and said
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Page 5 of 24

ELGAL MAINE OF INVENTORIASSIGNORY					
Inventor:	Meng-Jun Wang	Date:	JAN 2 4 2019		
Signature:	Meng-Jun Wan	<u> </u>			

Page 6 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Title of Invention: MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or encumbr n this assignment;	ance has been or will b	e 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 exer-	ition and said Letters Patent an stify as to the same in any inter	id legal equivalents as r	nav be
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WITNESS WHEREOF, I have her	olication, said invention and said descessary or desirable to carry or	d Letters Patent and sai	d
Note: An application data sheet (PTC	D/SB/14 or equivalent), includin	g naming the entire	

Page 7 of 24

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

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Inventor: Chen-Yi Weng

Date: JAN 2 4 2019

Signature: Men Yi Weng

8 of 24

Page

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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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;				
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Page 9 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NA	ME OF INVENTOR(ASSIG	NOR)		
Inventor:	Chin-Yang Hsieh		Date:	JAN 2 4 2019
Signature:	Chin-Yang	Usiel		A STATE OF THE STA

Page 10 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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Page 11 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NA	WE OF INVENTOR (ASSIGNOR)			
Inventor:	Jing-Yin Jhang	Date:	JAN 2 4 2019	
Signature:	Jing-Yin Thang		SVIJ	
	/ /			

Page 12 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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Page 13 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

Yu-Ping Wang

Date:

JAN 2 4 2019

Signature:

NPO#NAU-P3417-USA:0

CUST#UMCD-2018-0574

Page 14 of 24

F#NPO-P0002E-US1201 DSB0-107U039005

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Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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Page 15 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NA	VIE OF INVENTOR(ASSIGNOR)			
Inventor:	Chien-Ting Lin	Date:	JAN 2 4 2019	
Signature:	Chien trup Lin			
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Page 16 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

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NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NAME OF INVENTOR(ASSIGNOR)						
Inventor:	Ying-Cheng Liu	Date:	JAN 2 4 2019			
Signature;	Ying-Chong Lin		5.9 E.M.			

Page 18 of 24

NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

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LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: Yi-An Shih

Date: JAN 2 4 2019

Signature: 41-An Stol

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NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

Title of Invention:

MAGNETORESISTIVE RANDOM ACCESS MEMORY CELL

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	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	ı 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 MICROELECTRON	NICS having a postal add	dress 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, and for other good are	o I of the sum of One Dollar (\$ 1.0 ad valuable consideration.	00), the receipt of which is he	ereby	
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 of substitutes, or extensions thereof, ar	nd to any and all improvements w tion and, in and to, all Letters Pat r any continuations, continuation-i	thich are disclosed in the ent to be obtained for said in-part, divisions, renewals.	IEE	
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 each additional inventor.				

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NPO#NAU-P3417-USA:0 CUST#UMCD-2018-0574

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Yi-Hui Lee	Date:	JAN 2 4 2019		
Signature:	YT-Hui Lee	·			

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Title of Invention:

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I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impri	I false statement made isonment of not more t	in this declaration nan five (5) years,	n is punishable , or both.	
In consideration of the payment by	UNITED MICROEL CORP.	ECTRONICS	having a post	al address of
No.3, Li-Hsin Road 2, Science	-Based Industrial	Park, Hsin-Chu	_ ı City 300, Та	iwan, R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good an	o I of the sum of One D ad valuable consideration	ollar (\$ 1.00), the on.	receipt of which	is hereby
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 impro tion and, in and to, all l rany continuations, cor	/ements which are .etters Patent to b itinuation-in-part.	e disclosed in the e obtained for s divisions, renew	ne said vals
I hereby covenant that no assignmer entered into which would conflict with	nt, sale, agreement or e n this assignment;	ncumbrance 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	ition and said Letters P stifv as to the same in	atent and legal ed any interference l	quivalents as ma litigation procee	av be
representatives any and all papers, in maintain, issue and enforce said app equivalents thereof which may be ne IN WITNESS WHEREOF, I have her	dication, said invention cessary or desirable to	and said Letters F	Patent and said	
Note: An application data sheet (PTC	D/SB/14 or equivalent),	including naming	the entire	

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

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LEGAL NA	ME OF INVENTOR(ASSIGNOR)			
Inventor:	I-Ming Tseng	Date:	JAN 2 4 2019	
Signature:	I-Ming Tseng			

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F#NPO-P0002E-US1201 DSB0-107U039005

PATENT REEL: 048181 FRAME: 0786

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