506726673 06/22/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6773489

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Hui-Hsin Hsu	06/16/2021
Huan-Chi Ma	06/16/2021
Chien-Wen Yu	06/16/2021
Shih-Min Chou	06/16/2021
Nien-Ting Ho	06/16/2021
Ti-Bin Chen	06/16/2021

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:	17353830

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.

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ATTORNEY DOCKET NUMBER:	NAUP3863USA
NAME OF SUBMITTER:	SIBYL YU
SIGNATURE:	/SIBYL YU/
DATE SIGNED:	06/22/2021

Total Attachments: 12 source=4247590#page1.tif

PATENT REEL: 056610 FRAME: 0777

506726673



Title of Invention: SEMICONDUCTOR DEVICE 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	ımber	filed on		_, or
☐ PCT international applicatio	n number	filed		
The above-identified application was	s made or authorized to b	e made by me.		
I believe that I am the original invent application.	or or an original joint inve	ntor of a claimed i	invention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	I false statement made in isonment of not more tha	this declaration is n five (5) years, or	s punishable both.	
In consideration of the payment by	UNITED MICROELE CORP.	CTRONICS	naving a postal ac	ddress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Pa	rk, Hsin-Chu C	ity 300, Taiwa	n, R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good are	o I of the sum of One Doll nd valuable consideration	ar (\$ 1.00), the re	ceipt of which is h	nereby
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 improve ition and, in and to, all Le r any continuations, conti	ments which are o tters Patent to be o nuation-in-part, div	disclosed in the obtained for said visions, renewals.	
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or end h this assignment;	cumbrance has be	en or will be mad	le or
I further covenant that ASSIGNEE wand documents relating to said inverknown and accessible to I and will terelated thereto and will promptly exe	ntion and said Letters Pat estify as to the same in an	ent and legal equity interference, litio	valents as may be	e
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 are ecessary or desirable to c	nd said Letters Par arry out the propo	tent and said ses thereof.	
Note: An application data sheet (PTC	D/SB/14 or equivalent), in	cluding naming th	e entire	

Page 1 of 12

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

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Hui-Hsin Hsu	Date:	JUN 16. 2021		
Signature:	Hui-Hsin Hsu				

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535 Page 2 of 12

F#NPO-P0002E-US1201 DSB0-110U011671

Title of Invention: SEMICONDUCTOR DEVICE 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	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	ı claimed invention in t	he
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	I false statement made in this decisonment of not more than five (5)	claration is punishable) years, or both.	
In consideration of the payment by	UNITED MICROELECTRON	NICS having a post	tal address of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park, Hsi	n-Chu City 300, Ta	aiwan, R.O.C
(referred to as "ASSIGNEE" below) to acknowledged, and for other good an	o I of the sum of One Dollar (\$ 1.0 nd valuable consideration.	00), the receipt of which	h 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 w tion and, in and to, all Letters Pat r any continuations, continuation-i	rhich are disclosed in the rent to be obtained for in part, divisions, renevant.	he said wals.
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 inver known and accessible to I and will te related thereto and will promptly exe	ntion and said Letters Patent and stify as to the same in any interfe	legal equivalents as marence, litigation proces	nay be
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be ne IN WITNESS WHEREOF, I have her	olication, said invention and said Lecessary or desirable to carry out	etters Patent and said the proposes thereof.	i
Note: An application data sheet (PTC	D/SB/14 or equivalent), including	naming the entire	

Page 3 of 12

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

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor	Huan-Chi Ma	Date:	JUN 16. 202/		
Signature:	Huan Chi Ma	•			

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535 Page 4 of 12

F#NPO-P0002E-US1201 DSB0-110U011671

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

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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		0), the receipt of which is he	reby
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, ar	nd to any and all improvements wi tion and, in and to, all Letters Pate any continuations, continuation-i	hich are disclosed in the ent to be obtained for said n-part, divisions, renewals.	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 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 I stify as to the same in any interfer	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 WITNESS WHEREOF, I have her	dication, said invention and said Lacessary or desirable to carry out t	etters Patent and said the proposes thereof.	
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 ado</u>	naming the entire	

Page 5 of 12

LEGAL NAME OF INVENTOR(ASSIGNOR)				
Inventor:	Chien-Wen Yu	Date:		
Signature:	Chien-Wen Yu			

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535 Page 6 of 12

F#NPO-P0002E-US1201 DSB0-110U011671

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I here This declaration is directed to:	by declare that:			
☑ The attached application, or	-			
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The above-identified application was	made or authorized to be m	ade by me.		
I believe that I am the original invent application.	or or an original joint invento	r of a claimed inv	vention in the	
I hereby acknowledge that any willfu under18 U.S.C. 1001 by fine or impr	l false statement made in thi isonment of not more than fi	s declaration is p ve (5) years, or b	unishable oth.	
In consideration of the payment by	UNITED MICROELECT CORP.	RONICS hav	ving a postal addı	ress of
No.3, Li-Hsin Road 2, Science	-Based Industrial Park	Hsin-Chu Cit	y 300, Taiwan,	R.O.C
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good ar	o I of the sum of One Dollar and valuable consideration.	\$ 1.00), the rece	ipt of which is her	eby
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 improveme tion and, in and to, all Letter rany continuations, continua	nts which are dis s Patent to be ob tion-in-part, divis	closed in the tained for said ions, renewals.	ĒĒ
I hereby covenant that no assignment entered into which would conflict with	nt, sale, agreement or encun n this assignment;	nbrance has beer	n or 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	ntion and said Letters Patent estify as to the same in any ir	and legal equiva	lents as may be	is
representatives any and all papers, i maintain, issue and enforce said app equivalents thereof which may be ne IN WITNESS WHEREOF, I have her	olication, said invention and secessary or desirable to carry	said Letters Pater out the propose	nt and said s thereof.	
Note: An application data sheet (PTC	D/SB/14 or equivalent), inclu	ding naming the	entire	

Page 7 of 12

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

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535

LEGAL NAME OF INVENTOR(ASSIGNOR)							
Inventor	Shih-Min	Chou		Date	c	w 16.	2021
Signature	X:L-	Min Ch	ou	entre entre	-commenter constitution dealles who	OR ECONOMIC CONTRACTOR OF THE PROPERTY OF TH	and in the control of
			a. Tillia de la companya de la comp	инини невашавалисковой (1973)	***************************************	ngangga masa asina ana masa sa	annumentalismoonidii iida iida kaada sta (2004 44).
e.							
			Page	8 of	12		
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Title of Invention: SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I here This declaration is directed to:	eby declare that:			
☑ The attached application, of	r			
☐ United States application nu	filed o	on	, or	
☐ PCT international application	n number	file	d on	
The above-identified application was	s made or authorized t	o be made by me.		
I believe that I am the original inventage application.	tor or an original joint i	nventor of a claime	ed invention in	the
I hereby acknowledge that any willfuunder18 U.S.C. 1001 by fine or impu)
In consideration of the payment by	UNITED MICROE CORP.	LECTRONICS	having a pos	stal address of
No.3, Li-Hsin Road 2, Science	e-Based Industrial	Park, Hsin-Chu	ı City 300, T	aiwan, R.O.C
(referred to as "ASSIGNEE"below) t acknowledged, andfor other good ar			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	nd to any and all impro ation and, in and to, all r any continuations, co	ovements which are Letters Patent to b ontinuation-in-part,	e disclosed in be obtained for divisions, rene	the said wals,
I hereby covenant that no assignme entered into which would conflict wit	nt, sale, agreement or h this assignment;	encumbrance 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 exercise.	ntion and said Letters estify as to the same ir	Patent and legal ed any interference, l	quivalents as n litigation proce	nay be
representatives any and all papers, maintain, issue and enforce said appequivalents thereof which may be no IN WITNESS WHEREOF, I have he	plication, said invention acessary or desirable t	n and said Letters for carry out the pro	Patent and sai poses thereof.	

Page 9 of 12

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-P3863-USA:0 CUST#UMCD-2020-0535

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Nien-Ting Ho	Date:	JUN 16. 2021.		
Signature:	Nien-Ting Ho				

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535 Page 10 of 12

F#NPO-P0002E-US1201 DSB0-110U011671

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereb This declaration is directed to:	y declare that:					
☑ The attached application, or						
☐ United States application number			on	, or		
☐ PCT international application number filed on						
The above-identified application was	made or authorized to b	e made by me.				
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No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C						
(referred to as "ASSIGNEE"below) to acknowledged, andfor other good and	I of the sum of One Dol d valuable consideration	lar (\$ 1.00), the i	receipt of which is h	ereby		
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						

Page 11 of 12

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

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535

LEGAL NAME OF INVENTOR(ASSIGNOR)					
Inventor:	Ti-Bin Chen	Date:	JUN 16 3021		
Signature;	Ti Bin chen				

NPO#NAU-P3863-USA:0 CUST#UMCD-2020-0535 Page 12 of 12

F#NPO-P0002E-US1201 DSB0-110U011671

PATENT REEL: 056610 FRAME: 0790

RECORDED: 06/22/2021