

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6344596

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Chang-Po Hsiung	10/06/2020
Ching-Chung Yang	10/06/2020
Shan-Shi Huang	10/06/2020
Shin-Hung Li	10/06/2020
Nien-Chung Li	10/06/2020
Wen-Fang Lee	10/06/2020
Chiu-Te Lee	10/06/2020
Chih-Kai Hsu	10/06/2020
Chun-Ya Chiu	10/06/2020
Chin-Hung Chen	10/06/2020
Chia-Jung Hsu	10/06/2020
Ssu-I Fu	10/06/2020
Yu-Hsiang Lin	10/06/2020

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:	17067775

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.

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**

ATTORNEY DOCKET NUMBER:	NAUP3700USA
NAME OF SUBMITTER:	SIBYL YU
SIGNATURE:	/SIBYL YU/
DATE SIGNED:	10/12/2020

Total Attachments: 26

source=3983957#page1.tif
 source=3983957#page2.tif
 source=3983957#page3.tif
 source=3983957#page4.tif
 source=3983957#page5.tif
 source=3983957#page6.tif
 source=3983957#page7.tif
 source=3983957#page8.tif
 source=3983957#page9.tif
 source=3983957#page10.tif
 source=3983957#page11.tif
 source=3983957#page12.tif
 source=3983957#page13.tif
 source=3983957#page14.tif
 source=3983957#page15.tif
 source=3983957#page16.tif
 source=3983957#page17.tif
 source=3983957#page18.tif
 source=3983957#page19.tif
 source=3983957#page20.tif
 source=3983957#page21.tif
 source=3983957#page22.tif
 source=3983957#page23.tif
 source=3983957#page24.tif
 source=3983957#page25.tif
 source=3983957#page26.tif

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chang-Po Hsiung**

Date:

OCT 06 2020

Signature:

Chang-Po Hsiung

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Ching-Chung Yang**

Date: **OCT 06 2020**

Signature: Ching - Chung Yang

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS CORP.** having a postal address of _____

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Shan-Shi Huang**

Date: **OCT 06 2020**

Signature: 黃善士 Huang Shan-shi

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Shin-Hung LI**

Date: **OCT 06 2020**

Signature: Shin-Hung Li

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Nien-Chung Li**

Date: **OCT 06 2020**

Signature: Nien-Chung Li

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:

This declaration is directed to:

☒ The attached application, or

☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS CORP.** having a postal address of _____

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Wen-Fang Lee**

Date: **OCT 06 2020**

Signature: 李方 Lee Wen-Fang Lee

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chiu-Te Lee**

Date:

OCT 06 2020

Signature:

Chiu-Te Lee

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:

This declaration is directed to:

☒ The attached application, or

☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chih-Kai Hsu**

Date: **OCT 06 2020**

Signature: Chih-Kai Hsu

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chun-Ya Chiu**

Date: **OCT 06 2020**

Signature: Chun-Ya Chiu

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chin-Hung Chen**

Date: **OCT 06 2020**

Signature: Chin-Hung Chen

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

☒ The attached application, or

☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS CORP.** having a postal address of _____

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Chia-Jung Hsu**

Date:

OCT 06 2020

Signature:

Chia-Jung Hsu

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

Docket No NAUP3700USA

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: **Ssu-I Fu**

Date: **OCT 06 2020**

Signature: Ssu-I Fu

**COMBINE DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT**

Title of Invention:

SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF

As the below named inventor, I hereby declare that:
This declaration is directed to:

- ☒ The attached application, or
- ☐ United States application number _____ 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 inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In consideration of the payment by **UNITED MICROELECTRONICS** having a postal address of **CORP.**

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City 300, Taiwan, R.O.C.

(referred to as "ASSIGNEE" below) to I of the sum of One Dollar (\$ 1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration.

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 purposes 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.

Docket No NAUP3700USA

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: Yu-Hsiang Lin

Date: OCT 06 2020

Signature: Yu-Hsiang Lin