## PATENT ASSIGNMENT COVER SHEET

### Submission Type:
NEW ASSIGNMENT

### Nature of Conveyance:
ASSIGNMENT

### Conveying Party Data

<table>
<thead>
<tr>
<th>Name</th>
<th>Execution Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chia-Lin Lu</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Chun-Lung Chen</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Kun-Yuan Liao</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Hsiang-Hung Peng</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Wei-Hao Huang</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Ching-Wen Hung</td>
<td>01/09/2017</td>
</tr>
<tr>
<td>Chih-Sen Huang</td>
<td>01/09/2017</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Number</td>
<td>15402245</td>
</tr>
</tbody>
</table>

### 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:
NAUP2879USA

### Name of Submitter:
SIBYL YU

### Signature:
/SIBYL YU/

### Date Signed:
01/10/2017

Total Attachments: 14
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 FABRICATION 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/or 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 proposes thereof.

IN WITNESS WHEREOF, I have heretounto set hand and seal this JAN 09 2017 (Date of signing)

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-Lin Lu  Date: JAN 09 2017
Signature: chia-lin lu
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 FABRICATION 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 me of the sum of One Dollar ($1.00), the receipt of which is hereby acknowledged, and/or 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 me 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 JAN 09 2017 (Date of signing)

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-Lung Chen

Signature: [Signature]

Date: JAN 09 2017
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 FABRICATION 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 proposes thereof.

IN WITNESS WHEREOF, I have hereunto set hand and seal this JAN 09 2017 (Date of signing)

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: Kun-Yuan Liao
Date: JAN 03 2017
Signature: [Signature]

Docket No NAUP2879USA
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 FABRICATION 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 assigns 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 JAN 09 2017 (Date of signing)

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: Hsiang-Hung Peng

Signature: Hsiang-Hung Peng

Date: JAN 09 2017
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 FABRICATION 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 under18 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/or 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 proposes thereof.

IN WITNESS WHEREOF, I have hereunto set hand and seal this JAN 09 2017 (Date of signing)

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.
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 FABRICATION 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 willfully 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/or for other good and valuable consideration.

I hereby sell, assign and transfer to ASSIGNEE and the successors and assigns 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 JAN 09 2017 (Date of signing)

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.
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 FABRICATION 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/or 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 proposes thereof.

IN WITNESS WHEREOF, I have hereunto set hand and seal this JAN 09 2017 (Date of signing)

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-Sen Huang
Signature: Chih-Sen Huang
Date: JAN 09 2017