## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4994965

| SUBMISSION TYPE:      | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT     |

#### **CONVEYING PARTY DATA**

| Name            | Execution Date |
|-----------------|----------------|
| Yi-Wei Chen     | 05/31/2018     |
| Hsu-Yang Wang   | 05/31/2018     |
| Chun-Chieh Chiu | 05/31/2018     |
| Shih-Fang Tzou  | 05/31/2018     |

#### **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   |
| Name:           | FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD.                               |
| Street Address: | NO.88, LIANHUA AVENUE, INTEGRATED CIRCUIT SCIENCE PARK,<br>JINJIANG CITY |
| City:           | QUANZHOU CITY, FUJIAN PROVINCE   |
| State/Country:  | CHINA  |

## **PROPERTY NUMBERS Total: 1**

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 16001949 |

#### CORRESPONDENCE DATA

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|-------------------------|-------------|
| NAME OF SUBMITTER:      | SIBYL YU    |
| SIGNATURE:              | /SIBYL YU/  |
| DATE SIGNED:            | 06/07/2018  |

PATENT 504948218 REEL: 046007 FRAME: 0783

| Total Attachments: 8     |  |
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PATENT REEL: 046007 FRAME: 0784

### Title of Invention:

## METHOD OF FORMING SEMICONDUCTOR MEMORY DEVICE

| 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 o   | on,   | or      |
| ☐ PCT international application   | n number  |   | filed on  |         |
| The above-identified application was  | made or authorized to   | be made by me.  | 7,000   |         |
| I believe that I am the original inventorapplication.   | or or an original joint in  | ventor of a claime  | d invention in the  |         |
| I hereby acknowledge that any willfu<br>under18 U.S.C. 1001 by fine or impri  | I false statement made<br>isonment of not more t                                | in this declaration<br>nan five (5) years,                      | is punishable<br>or both.   |         |
| In consideration of the payment by UNITED MICROELECTRONICS having a postal address CORP.  |   |   | ess of  |         |
| No.3, Li-Hsin Road 2, Science   | -Based Industrial I   | Park, Hsin-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 D<br>d valuable consideration                             | ollar (\$ 1.00), the<br>on.                                     | receipt of which is her   | eby     |
|   | Fujian Jinhua Inte<br>Co., Ltd.   | grated Circuit  | having a postal addr  | ess of  |
| No.88, Lianhua Avenue, Integ<br>Fujian Province 362200, P.R.O   | rated Circuit Scien   | ce Park, Jinjia   | ng City, Quanzho  | u City, |
| (referred to as "ASSIGNEE"below) to acknowledged, andfor other good an  | o I of the sum of One D<br>d valuable consideration                             | ollar (\$ 1.00), the<br>on.                                     | receipt of which is her   | eby     |
| I hereby sell, assign and transfer to A the entire right, title and interest in ar invention as above-identified application or substitutes, or extensions thereof, and | nd to any and all impro<br>tion and, in and to, all l<br>any continuations, cor | vements which are<br>Letters Patent to b<br>ntinuation-in-part. | e disclosed in the<br>e obtained for said<br>divisions, renewals. | ΞE      |
| I hereby covenant that no assignment entered into which would conflict with   | nt, sale, agreement or en this assignment;                                      | encumbrance has   | been or will be made  | or      |
| I further covenant that ASSIGNEE wi<br>and documents relating to said inven<br>known and accessible to I and will te<br>related thereto and will promptly exec          | tion and said Letters P<br>stify as to the same in                              | atent and legal eq<br>anv interference. I                       | uivalents as may be itigation proceeding                          | s       |

Page 1 of 8

NPO#NAU-P3259-USA:0 CUST#UMCF-2018-0020

| maintain, iss | ves any and all papers, instruments or affidavi<br>sue and enforce said application, said invention<br>thereof which may be necessary or desirable t | n and said Letters | Patent and s | said              |
|---------------|--|--------------------|--------------|-------------------|
|               | S WHEREOF, I have hereunto set hand and so   |                    | 1 2018       | (Date of signing) |
|               | plication data sheet (PTO/SB/14 or equivalent tity, must accompany this form. Use this form  |                    |              |                   |
| LEGAL NAN     | ME OF INVENTOR(ASSIGNOR)   |                    |              |                   |
| Inventor:     | Yi-Wei Chen  | Date:              | MAY 3 1      | 2018              |

Vi-Wei Chen

Signature:

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NPO#NAU-P3259-USA:0 CUST#UMCF-2018-0020

### Title of Invention:

## METHOD OF FORMING SEMICONDUCTOR MEMORY DEVICE

| As the below named inventor, I here This declaration is directed to:   | eby declare that:   |   |  |                    |  |
|--|---|---|--|--------------------|--|
| ☑ The attached application, o  | r   |   |  |                    |  |
| ☐ United States application number   |   |   | on   | , or               |  |
| ☐ PCT international application  | on number   |   | filed on   |                    |  |
| The above-identified application was   | s made or authorized to be m  |   |  |                    |  |
| I believe that I am the original inventage application.  | tor or an original joint invento  | r of a claime                                   | d invention in t                                   | the                |  |
| I hereby acknowledge that any willfu<br>under18 U.S.C. 1001 by fine or impi  | ıl false statement made in thi<br>risonment of not more than fi                                   | s declaratior<br>ve (5) years,                  | is punishable<br>or both.                          |                    |  |
| In consideration of the payment by   | UNITED MICROELECT CORP.   | RONICS  | having a pos                                       | tal address of     |  |
| No.3, Li-Hsin Road 2, Science  | e-Based Industrial Park,  | Hsin-Chu  | City 300, Ta                                       | aiwan, R.O.C.      |  |
| (referred to as "ASSIGNEE"below) to acknowledged, and for other good and acknowledged and the state of the st | o I of the sum of One Dollar (<br>nd valuable consideration.                                      | (\$ 1.00), the                                  | receipt of whic                                    | h is hereby        |  |
| In consideration of the payment by   | Fujian Jinhua Integrate<br>Co., Ltd.  | ed Circuit                                      | having a pos                                       | tal address of     |  |
| No.88, Lianhua Avenue, Integ<br>Fujian Province 362200, P.R.0  | rated Circuit Science P<br>C.   | ark, Jinjia                                     | ng City, Qua                                       | ınzhou City,       |  |
| (referred to as "ASSIGNEE"below) to acknowledged, andfor other good are  | o I of the sum of One Dollar (<br>nd valuable consideration.                                      | \$ 1.00), the                                   | receipt of whic                                    | h is hereby        |  |
| I hereby sell, assign and transfer to a<br>the entire right, title and interest in a<br>invention as above-identified applica-<br>invention by the above application o<br>substitutes, or extensions thereof, an   | nd to any and all improveme<br>ation and, in and to, all Letters<br>r any continuations, continua | nts which are<br>s Patent to b<br>tion-in-part. | e disclosed in the obtained for a divisions, renew | he<br>said<br>wals |  |
| I hereby covenant that no assignment<br>entered into which would conflict wit  | nt, sale, agreement or encum<br>h this assignment;  | brance has                                      | been or will be                                    | made or            |  |
| I further covenant that ASSIGNEE wand documents relating to said inver<br>known and accessible to I and will te<br>related thereto and will promptly exe   | ntion and said Letters Patent<br>estify as to the same in any in                                  | and legal eq<br>terference. I                   | juivalents as m                                    | av he              |  |

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NPO#NAU-P3259-USA:0 CUST#UMCF-2018-0020

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 \_\_\_\_\_MAY 3 1 2018 (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 <u>each additional inventor</u>.

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor: Hsu-Yang Wang

Date:

MAY 3 1 2018

Signature:

Man-Yang Wang

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NPO#NAU-P3259-USA:0 CUST#UMCF-2018-0020

### Title of Invention:

# METHOD OF FORMING SEMICONDUCTOR MEMORY DEVICE

| 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 o               | n                         | , or            |
| ☐ PCT international applicatio  |  |                        | 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                                  | a claimed              | l 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<br>isonment of not more than five (5 | claration<br>5) years, | is punishable<br>or both. | )               |
| In consideration of the payment by  | UNITED MICROELECTROI   | NICS                   | having a pos              | stal address of |
| No.3, Li-Hsin Road 2, Science   | -Based Industrial Park, Hs   | in-Chu                 | City 300, T               | aiwan, R.O.C.   |
| (referred to as "ASSIGNEE"below) to acknowledged, andfor other good an  | o I of the sum of One Dollar (\$ 1.0<br>d valuable consideration.      | 00), the r             | eceipt of whic            | ch is hereby    |
|   | Fujian Jinhua Integrated C   | ircuit                 | having a pos              | stal address of |
| No.88, Lianhua Avenue, Integ<br>Fujian Province 362200, P.R.C   | rated Circuit Science Park,  | , Jinjian              | g City, Qu                | anzhou City,    |
| (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 r             | eceipt of whic            | ch is hereby    |
| 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 entered into which would conflict with   | nt, sale, agreement or encumbrar<br>n this assignment;                 | nce has b              | een or will be            | e made or       |
| 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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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 MAY 3 1 2018 (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-Chieh Chiu

Date:

MAY 3 1 2018

Signature:

Chun-Chieh Chiu

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NPO#NAU-P3259-USA:0 CUST#UMCF-2018-0020

### Title of Invention:

# METHOD OF FORMING SEMICONDUCTOR MEMORY DEVICE

| 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                  | filed on,               |         |
| ☐ PCT international application   | n number  |                            | on                      |         |
| The above-identified application was  | made or authorized to be made   | by me.                     |                         |         |
| I believe that I am the original inventapplication.   | 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 impri   | l false statement made in this dec<br>isonment of not more than five (5   | claration is<br>) years, o | s punishable<br>r both. |         |
| In consideration of the payment by  | UNITED MICROELECTRON  | NICS I                     | naving a postal addr    | ess of  |
| No.3, Li-Hsin Road 2, Science   | -Based Industrial Park, Hsi   | in-Chu C                   | ity 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<br>d valuable consideration.         | 00), the re                | ceipt of which is her   | eby     |
| In consideration of the payment by  | Fujian Jinhua Integrated C<br>Co., Ltd.                                   | ircuit                     | naving a postal addr    | ess of  |
| No.88, Lianhua Avenue, Integ<br>Fujian Province 362200, P.R.C   | rated Circuit Science Park,   | Jinjianç                   | յ City, Quanzhoւ        | ı City, |
| (referred to as "ASSIGNEE"below) to acknowledged, andfor other good an  | o I of the sum of One Dollar (\$ 1.0<br>d valuable consideration.         | 00), the re                | ceipt of which is her   | eby     |
| 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 assignmen entered into which would conflict with  | nt, sale, agreement or encumbran<br>n this assignment;                    | ice has be                 | en or will be made o    | or      |
| I further covenant that ASSIGNEE wi<br>and documents relating to said inven<br>known and accessible to I and will te<br>related thereto and will promptly exec  | tion and said Letters Patent and l<br>stify as to the same in any interfe | legal equir                | valents as may be       | S       |

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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 MAY 3 1 2018 (D IN WITNESS WHEREOF, I have hereunto set hand and seal this (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 <u>each additional inventor.</u>

LEGAL NAME OF INVENTOR(ASSIGNOR)

Inventor:

**Shih-Fang Tzou** 

Date:

MAY 3 1 2018

Page

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**PATENT** 

**RECORDED: 06/07/2018** 

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