504656708 11/27/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4703430

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------|----------------|
| JIANYE ZHANG | 10/23/2017 |
| WEI LI | 10/23/2017 |
| XING ZHANG | 10/23/2017 |

RECEIVING PARTY DATA

| Name: | BOE TECHNOLOGY GROUP CO., LTD. | |
|-----------------|--|--|
| Street Address: | NO. 10 JIUXIANQIAO ROAD, CHAOYANG DISTRICT | |
| City: | BEIJING | |
| State/Country: | CHINA | |
| Postal Code: | 100015 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15822429 |

CORRESPONDENCE DATA

Fax Number: (612)334-3312

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: 612-334-3222 Email: eguetzko@wck.com

Correspondent Name: JUDSON K. CHAMPLIN

Address Line 1: 900 SECOND AVENUE SOUTH

Address Line 2: **SUITE 1400**

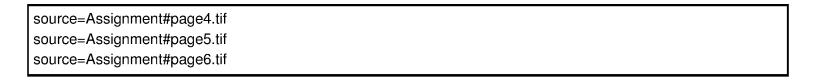
Address Line 4: MINNEAPOLIS, MINNESOTA 55402

ATTORNEY DOCKET NUMBER: B300.0002US1 NAME OF SUBMITTER: JUDSON K. CHAMPLIN SIGNATURE: /Judson K. Champlin/ **DATE SIGNED:** 11/27/2017

Total Attachments: 6

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> **PATENT** REEL: 044222 FRAME: 0724 504656708



PATENT REEL: 044222 FRAME: 0725

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

| Title of Invention | TOP-GATE THIN FILM TRANSISTOR, MANUFACTURING METHOD THEREOF, ARRAY SUBSTRATE AND DISPLAY PANEL COMPRISING TOP-GATE THIN FILM TRANSISTOR |
|-------------------------------------|---|
| | named inventor, I hereby declare that: |
| This declar is directed The above- | ☑ The attached application or |
| | at I am the original inventor or an original joint inventor of a claimed invention |
| | knowledge that any willful false statement made in this declaration is under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) th. |

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, each undersigned inventor (hereinafter referred to as "ASSIGNOR"), do hereby:

SELL, ASSIGN AND TRANSFER to BOE TECHNOLOGY GROUP CO., LTD., having a place of business at No.10 Jiuxianqiao Rd., Chaoyang District, Beijing .100015, P.R. China, (hereinafter referred to as "ASSIGNEE") the entire right, title and interest for the United States and all foreign countries in and to any and all inventions which are disclosed in the above-identified application for United States Letters Patent, which has been executed by the undersigned concurrently herewith, which claims priority to CN 201710224236.7 filed on April 7, 2017; which in turn claims priority to filed on ______; such applications and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such inventions; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such inventions; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such inventions to the Assignee;

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Docket No. X1607457JZ+PX1607457JZCN-US-OIUS1720401CN

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such inventions; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such inventions and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such inventions in the Assignee, and for securing, maintaining and enforcing proper patent protection for such inventions;

TO BE BINDING on the heirs; assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the agents and attorneys of Westman. Champlin & Koehler. P.A. the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

The assignment of said invention is effective as of the earlier of (1) the date of execution shown below or (2) the filing date of the first filed of said patent applications.

STATEMENTS

I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part.

| *************************************** | ************************ | **************** | ****************************** | *************************************** | ****** | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | *************************************** | ~~~~~~~~ | ****** |
|---|------------------------------|------------------|--------------------------------|---|--------|---|---|----------|--------|
| LEG/ | AL NAME OF INVE | NTOR | | | | | | | |
| Inver | ntor: <u>Jianye ZHAN</u> | G Date: | Oct. 23. | 2017 | | | | | |
| Signa | ature: <u>Zio<i>aa</i> 2</u> | مل ع | 1.47V Gr | . | | | | | |
| | Y 7 | | | | | | ***** | | |

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

| Title of Invention | TOP-GATE THIN FILM TRANSISTOR, MANUFACTURING METHOD THEREOF, ARRAY SUBSTRATE AND DISPLAY PANEL COMPRISING TOP-GATE THIN FILM TRANSISTOR | | | |
|---|---|--|--|--|
| As a below | named inventor, I hereby declare that: | | | |
| This decla | ration | | | |
| is directed | is directed to: | | | |
| | United States application or PCT international application numberfiled on | | | |
| The above-identified application was made or authorized to be made by me. | | | | |
| I believe that in the applic | at I am the original inventor or an original joint inventor of a claimed invention cation. | | | |
| | knowledge that any willful false statement made in this declaration is under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) with. | | | |

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, each undersigned inventor (hereinafter referred to as "ASSIGNOR"), do hereby:

SELL, ASSIGN AND TRANSFER to <u>BOE TECHNOLOGY GROUP CO., LTD.</u>, having a place of business at <u>No.10 Jiuxianqiao Rd.</u> Chaoyang District, Beijing 10001S, <u>P.R. China</u>, (hereinafter referred to as "ASSIGNEE") the entire right, title and interest for the United States and all foreign countries in and to any and all inventions which are disclosed in the above-identified application for United States Letters Patent, which has been executed by the undersigned concurrently herewith, which claims priority to <u>CN 201710224236.7</u> filed on <u>April 7, 2017</u>; which in turn claims priority to <u>filed on _______</u>; such applications and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such inventions; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such inventions; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such inventions to the Assignee;

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PATENT REEL: 044222 FRAME: 0728

Docket No. X1607457JZ+PX1607457JZCN-US-OIUS1720401CN

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such inventions; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such inventions and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such inventions in the Assignee, and for securing, maintaining and enforcing proper patent protection for such inventions;

TO BE BINDING on the heirs; assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the agents and attorneys of Westman. Champlin & Koehler. P.A. the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

The assignment of said invention is effective as of the earlier of (1) the date of execution shown below or (2) the filing date of the first filed of said patent applications.

STATEMENTS

I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part.

| LEGAL NAME OF INVENTO | R |
|------------------------|-----------------|
| Inventor: Wei LI Date: | Oct. 23, 2017 |
| Signature: Wei | Li _V |

4

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

| Title of Invention | TOP-GATE THIN FILM TRANSISTOR, MANUFACTURING METHOD THEREOF, ARRAY SUBSTRATE AND DISPLAY PANEL COMPRISING TOP-GATE THIN FILM TRANSISTOR |
|---------------------------------|---|
| As a below | named inventor, I hereby declare that: |
| This declar | The attached application or |
| 10 | United States application or PCT international application numberfiled on |
| The above-i | dentified application was made or authorized to be made by me. |
| I believe that in the applic | et I am the original inventor or an original joint inventor of a claimed invention ation. |
| | knowledge that any willful false statement made in this declaration is under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) th. |

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SELL, ASSIGN AND TRANSFER to BOE TECHNOLOGY GROUP CO. LTD., having a place of business at No.10 Juniangiao Rd., Chaoyang District, Beijing 100015, P.R., China, (hereinafter referred to as "ASSIGNEE") the entire right, title and interest for the United States and all foreign countries in and to any and all inventions which are disclosed in the above-identified application for United States Letters Patent, which has been executed by the undersigned concurrently herewith, which claims priority to CN 201710224236.7 filed on April 7, 2017; which in turn claims priority to filed on such applications and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such inventions; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such inventions; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such inventions to the Assignee;

5

PATENT REEL: 044222 FRAME: 0730

Docket No. X1607457JZ+PX1607457JZCN-US-OIUS1720401CN

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such inventions; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such inventions and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such inventions in the Assignee, and for securing, maintaining and enforcing proper patent protection for such inventions;

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| LEGAL NAME OF INVENTOR | 38 | |
|------------------------------|------------|--|
| Inventor: Xing ZHANG Date: | OCE.23.7d7 | |
| Signature: <u>Xing 2HA</u> A | (G | |

PATENT REEL: 044222 FRAME: 0731

RECORDED: 11/27/2017