

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FPPH17130023	FOR FURTHER ACTION		See item 4 below
International application No. PCT/CN2017/074252	International filing date (<i>day/month/year</i>) 21 February 2017 (21.02.2017)	Priority date (<i>day/month/year</i>) 05 September 2016 (05.09.2016)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant BOE TECHNOLOGY GROUP CO., LTD.			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 05 March 2019 (05.03.2019)
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From the INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing <i>(day/month/year)</i> 25 May 2017	
Applicant's or agent's file reference FPPH17130023	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/CN2017/074252	International filing date <i>(day/month/year)</i> 21 February 2017
Priority date <i>(day/month/year)</i> 05 September 2016	
International Patent Classification (IPC) or both national classification and IPC H01L 21/52(2006.01)i	
Applicant BOE TECHNOLOGY GROUP CO., LTD.	

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/	Date of completion of this opinion	Authorized officer

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/CN2017/074252

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/CN2017/074252

Box No. II **Priority**

1. The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
 - [1] Upon verification, the right of priority is valid.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2017/074252

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement	Novelty (N)	Claims	2-9, 12 1, 10-11, 13-14
			YES NO
	Inventive step (IS)	Claims	None 1-14
			YES NO
	Industrial applicability (IA)	Claims	1-14 None
			YES NO
2. Citations and explanations :			
[1] Reference is made to the following reference document:			
[2] D1: CN 102332521 A (25 January 2012, description, paragraphs [0006] - [0042], and figures 1-6)			
[3] 1. D1 is the closest prior art, and discloses an illuminating assembly, wherein a plurality of P electrode regions (equivalent to a second external electrode) and N electrode regions (equivalent to a first external electrode) insulated from each other are arranged on an upper surface of a substrate 1; and a light-emitting region is on the upper surface and surrounds the electrode regions, and the light-emitting region comprises an N-GaN layer 3 (equivalent to a first electrode layer), a multiple quantum well layer 4 (equivalent to an electroluminescent layer), and a P-GaN layer 5 (equivalent to a second electrode layer) which are sequentially arranged in a direction away from the substrate 1, wherein the N-GaN layer 3 is electrically connected to an N electrode, and the P-GaN layer 5 is electrically connected to a P electrode.			
[4] It can be seen therefrom that D1 discloses the solution of claim 1, and therefore, the subject matter of claim 1 lacks novelty under PCT Article 33(2), and does not involve an inventive step under PCT Article 33(3).			
[5] 2. D1 does not disclose the additional technical features of claims 2-9 and 12, and therefore, the subject matter of claims 2-9 and 12 is novel under PCT Article 33(2). However, the additional technical features of claims 2-9 and 12 can be arbitrarily set by a person skilled in the art according to requirements, and are common general knowledge; and on the basis of D1 combined with common general knowledge, it would have been obvious to a person skilled in the art to arrive at the technical solutions of claims 2-9 and 12. Therefore, the subject matter of claims 2-9 and 12 does not involve an inventive step under PCT Article 33(3).			
[6] 3. D1 discloses the additional technical features of claims 10 and 11. Therefore, the subject matter of claims 10 and 11 lacks novelty under PCT Article 33(2), and does not involve an inventive step under PCT Article 33(3).			
[7] 4. D1 discloses the additional technical feature of claim 13. Therefore, the subject matter of claim 13, when referring to claims 1, 10 and 11, lacks novelty under PCT Article 33(2), and does not involve an inventive step under PCT Article 33(3). The subject matter of claim 13, when referring to claims 2-9 and 12, is novel under PCT Article 33(2), but does not involve an inventive step under PCT Article 33(3).			
[8] 5. D1 discloses an illuminating apparatus comprising the illuminating assembly. Therefore, where claims 1, 10, 11 and 13 referred to thereby lack novelty, and do not involve an inventive step, the subject matter of claim 14 lacks novelty under PCT Article 33(2), and does not involve an inventive step under PCT Article 33(3). Where claims 2-9, 12 and 13 referred to thereby are novel, but do not involve an inventive step, the subject matter of claim 14 is novel under PCT Article 33(2), but does not involve an inventive step under PCT Article 33(3).			
[9] 6. The invention of claims 1-14 can be made or used in industry, and therefore, the subject matter of claims 1-14 is industrially applicable under PCT Article 33(4).			