

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 YH1650544PCT	FOR FURTHER ACTION		See item 4 below
International application No. PCT/CN2017/070642	International filing date (<i>day/month/year</i>) 09 January 2017 (09.01.2017)	Priority date (<i>day/month/year</i>) 25 August 2016 (25.08.2016)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant SHENZHEN CHINA STAR OPTOELECTRONICS TECHNOLOGY 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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<p align="center">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 26 February 2019 (26.02.2019)</p>
	<p>Authorized officer</p> <p align="center">Xiaofan Tang</p> <p>e-mail: pct.team2@wipo.int</p>

From the INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference YH1650544PCT		Date of mailing (day/month/year) 30 March 2017
FOR FURTHER ACTION		See paragraph 2 below
International application No. PCT/CN2017/070642	International filing date (day/month/year) 09 January 2017	Priority date (day/month/year) 25 August 2016
International Patent Classification (IPC) or both national classification and IPC G09G 3/3208(2016.01)i		
Applicant SHENZHEN CHINA STAR OPTOELECTRONICS TECHNOLOGY 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/CN2017/070642

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 43bis.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.

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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 priority claim is established.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2017/070642

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	1-15 _____ YES None _____ NO
	Inventive step (IS)	Claims	None _____ YES 1-15 _____ NO
	Industrial applicability (IA)	Claims	1-15 _____ YES None _____ NO
2. Citations and explanations :			
[1] D1: CN 101140728 A 12 March 2008 (12.03.2008)			
[2] 1. Novelty and inventive step:			
[3] D1 discloses a plasma Pulse Width Modulation (PWM) pixel driving method (description, p. 2, line 23 to p. 5, line 18, and fig. 1-6). The method comprises segmenting a frame image into multiple subfields in different weights; splitting a 128 high weight subfield into two 64 secondary subfields according to a predetermined splitting ratio; rearranging the secondary subfields obtained by splitting the high weight subfield and subfields that are not split according to an input image and the predetermined splitting ratio, so as to eliminate a picture display error.			
[4] Hence, upon comparison, claim 1 differs from D1 in that: the method is used for driving an OLED display.			
[5] Therefore, claims 1-15 are novel in the sense of PCT Article 33(2).			
[6] However, an OLED display and a plasma display are both suitable for a PWM method. Therefore, applying the driving method for driving an OLED display is a conventional adaption for use. Claim 1 lacks an inventive step in the sense of PCT Article 33(3).			
[7] The arrangement of secondary subfields after splitting defined in dependent claims 2 and 3 is a conventional mode, and the arrangement of subfields that are not split defined in dependent claims 4-7 is disclosed by D1 (description, p. 2, line 23 to p. 5, line 18, and fig. 1-6).			
[8] Moreover, D1 discloses (description, p. 2, line 23 to p. 5, line 18, and fig. 1-6) that the weight of the high weight subfield is an even number, i.e., 128; the subfield is subjected to equal weight spitting to obtain two 64 secondary subfields; there is only one high weight subfield. That is, the additional technical features of dependent claims 8, 10, and 11 are disclosed by D1, and a high weight subfield form and a splitting form defined in dependent claim 9 are both matters of routine design.			
[9] Moreover, the arrangement after splitting defined in dependent claims 12-15 is a conventional mode in the art, and the effect of eliminating the picture display error falls within a conventional expectation range in the art.			
[10] Therefore, claims 2-15 lack an inventive step in the sense of PCT Article 33(3).			
[12] 2. Industrial applicability			
[13] Claims 1-15 can be applied in the filed of display driving, and therefore are industrially applicable in the sense of PCT Article 33(4).			