

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 SZP2015C014	FOR FURTHER ACTION	See item 4 below
International application No. PCT/CN2015/096824	International filing date (<i>day/month/year</i>) 09 December 2015 (09.12.2015)	Priority date (<i>day/month/year</i>)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant JI, Guoping		

<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 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 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 12 June 2018 (12.06.2018)
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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> 27 May 2016	
Applicant's or agent's file reference SZP2015C014	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/CN2015/096824	International filing date <i>(day/month/year)</i> 09 December 2015
International Patent Classification (IPC) or both national classification and IPC C08J 9/06(2006.01)i; C08L 23/00(2006.01)i	
Applicant JL, Guoping	

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/CN2015/096824

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.

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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	7, 8 <hr/> 1-6 <hr/> None
			YES NO YES
	Inventive step (IS)	Claims	1-8 <hr/> 1-8 <hr/> None
			NO YES NO
	Industrial applicability (IA)	Claims	1-8 <hr/> None
			YES NO
2. Citations and explanations :			
[1] D1: CN 86105767 A (21 January 1987)			
[2] Novelty			
[3] D1 discloses a method for preparing a polyolefin foam. The method is (see description, embodiment 1):			
[4] a formula (by weight): 100 parts of polyethylene, 14 parts of azodicarbonamide, 0.3 parts of zinc white, 0.3 parts of zinc stearate, and 0.6 parts of diisopropylbenzene peroxide. The aforementioned components are uniformly dispersed and mixed. The mixture is loaded into a first metal mold; the side wall of the mold widens gradually upward, and a compression molding machine is provided at the top. The mold is tightly sealed under external pressure, and heated to 155°C for 17 minutes. While the foam body remains at a high temperature, the pressure added to the mold is removed, and a primary foam body is also removed from the metal mold. Approximately 75% of the blowing agent is not broken down. After being removed from the mold, the primary foam body is immediately placed into a box-shaped second metal mold at a high temperature, the side wall of said mold widening gradually from bottom to top. Two heating plates cover the top and bottom of the metal mold, each plate has a channel to supply a flow of steam, heated for 15 minutes at 175°C. As a result, the foam body expands to fill the interior space of the second metal mold described above (approximately 34% of the blowing agent remains not broken down). The resulting foam body continues to be heated for five minutes at the aforementioned temperature. Then the mold is opened to obtain a white foam material having uniform and well-closed microbubble bodies.			
[5] The manufacturing method set forth by claim 1 is disclosed in D1. Therefore claim 1 is not novel and does not comply with PCT Article 33(2).			
[6] In view of the described disclosure of D1, it can be known that the additional technical features further defined by dependent claims 2-6 are disclosed in D1. Therefore claims 2-6 are not novel and do not comply with PCT Article 33(2).			
[7] The additional technical features further defined by dependent claims 7 and 8 are not disclosed in D1. Therefore claims 7 and 8 are novel and comply with PCT Article 33(2).			
[8] Inventive step			
[9] Claims 1-6 are not novel, and therefore necessarily do not involve an inventive step and do not comply with PCT Article 33(3).			
[10] The chemical blowing agent, crosslinking agent, and foaming auxiliary further defined by claim 7, as well as their amounts and stabilizers, are disclosed by D1. D1 also discloses (see D1, claim 7): to a polyolefin, adding a chemical foaming agent, a crosslinking agent, and appropriate amount of foaming auxiliary, pigment, and fillers that sometimes need to be added. Said compounds are then mixed uniformly at a temperature of 70-130°C. A person skilled in the art could also adjust the amount of stabilizer and the temperature of mixing. Therefore it would be obvious to combine D1 and customary means in the art to arrive at the technical solution of claim 7; claim 7 does not involve an inventive step and does not comply with PCT Article 33(3).			
[11] The temperature further defined by claim 8 is not disclosed by D1; a person skilled in the art could adjust the temperature of mixing. Therefore claim 8 does not involve an inventive step and does not comply with PCT Article 33(3).			

WRITTEN OPINION OF THE
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Box No. V

Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability;
citations and explanations supporting such statement

[12] Industrial applicability

[13] The method for manufacturing the polyolefin foam set forth by claims 1-8 can be manufactured or used in industry. Therefore claims 1-8 are industrially applicable and comply with PCT Article 33(4).