

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:

100094
China 3 FL, Building 2, Yard 3, FengXiuZhongLu
Road, Haidian District, Beijing

WU, FENG & ZHANG

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference F21W1018		Date of mailing (day/month/year) 25 August 2022
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/CN2021/133162	International filing date (day/month/year) 25 November 2021	Priority date (day/month/year)
International Patent Classification (IPC) or both national classification and IPC C08J 5/18(2006.01)i; C08L 23/04(2006.01)i; C08L 23/10(2006.01)i; B32B 27/08(2006.01)i; B32B 27/32(2006.01)i		
Applicant DOW GLOBAL TECHNOLOGIES LLC et al		

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/ National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088	Date of completion of this opinion 19 August 2022	Authorized officer ZHANG,Xi
Facsimile No. (86—10) 62019451	Telephone No. 010-62084387	

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2021/133162

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:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
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 forming part of 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	1-15	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-15	NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims	None	NO

2. Citations and explanations:

[1] **Reference is made to the following document:**

[2] D1:CN106457806A 22 February 2017(22.02.2017)

[3] **Novelty**

[4] D1 discloses a multilayer film comprising: a core layer and two skin layers, wherein the core layer is positioned between the two skin layers, wherein the core layer comprises a polyethylene polymer blend, the polyethylene polymer blend comprising at least 20%, by weight of the polyethylene polymer blend, of an ethylene-based polymer having a density of 0.900-0.940/cc and a melt index of 0.7-6 g/10 min, wherein the polyethylene polymer blend has an overall density of about 0.910-0.950 cc and a melt index of about 0.7-6 g/10 min, and wherein each skin layer independently comprises a propylene-based polymer; and where the skin layer is not a non-woven material. The propylene-based polymer could be a propylene/olefin copolymer. The ethylene-based polymer may be a LLDPE. The polyethylene polymer blend may further comprise of MDPE or HDPE, which may have a density of 0.930-0.965 g/cc and a melt index of 0.7-10 g/10 min. The core layer may comprise greater than 50% to 90% of the overall film thickness. The film could be biaxially oriented. The ultrasonically-bonded laminates comprise a multilayer film as previously described. The films or ultrasonically bonded laminates may be used in a variety of applications, such as medical drapes, gowns (see description, paragraphs [0006]-[0013]-[0023]-[0088]). D1 does not disclose the specific short chain branch level of the core layer in a portion between log(Mw) of 4.0 to 5.0, melt point of the propylene-based composition, melt index and density of the third polyethylene-based component, draw ratio and modulus of the biaxially oriented multilayer film. The specific kinds of the article are not mentioned as well. Therefore, the prior art does not disclose the subject-matter of claims 1-15, claims 1-15 are novel and meet the requirement of pct 33(2).

[5] **Inventive step**

[6] D1 is regarded as being the closest prior art to the subject-matter of claim 1. The differences between claim 1 and D1 are mentioned above. However, it is obvious for a person skilled in the art to determine the proper short chain branch level of the core layer by choosing ethylene-based copolymer with different olefins. Therefore, the subject-matter of claim 1 does not involve an inventive step in view of D1. The additional features of claims 2,4-6,8,11-12 are disclosed by D1. For claims 3,7,9,10,13, a person skilled in the art can determine appropriate melt point of the propylene-based composition, melt index and density of the third polyethylene-based component, average SCB of the core layer, draw ratio and modulus of the biaxially oriented multilayer film based on desired properties. The subject-matter of claims 14-15 protects the article and the laminated product comprising the biaxially oriented multilayer film. D1 discloses similar laminated product, a person skilled in the art can also determine the specific kinds of the article based on the properties of the multilayer film. Therefore, the subject-matter of claims 2-15 does not involve an inventive step in view of D1. In summary, claims 1-15 do not meet the requirement of PCT 33(3).

[7] **Industrial Applicability**

[8] The subject-matter of claims 1-15 can be made or used in polyolefin films industry, and therefore meets the requirement of PCT 33(4).