

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
 100013
 China 10th Floor, Tower C, Beijing Global Trade Center, 36 North Third Ring Road East, Dongcheng District, Beijing

NTD PATENT AND TRADEMARK AGENCY LIMITED

PCT

WRITTEN OPINION OF THE
 INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 08 April 2019	
Applicant's or agent's file reference P20182602	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/CN2018/094427	International filing date (day/month/year) 04 July 2018
Priority date (day/month/year)	
International Patent Classification (IPC) or both national classification and IPC C09J 131/04(2006.01)i; C09J 11/06(2006.01)i; D04H 1/587(2012.01)i; D04H 1/64(2012.01)i; A61F 13/15(2006.01)i; C08L 33/26(2006.01)i; C09J 123/08(2006.01)i; C08F 218/08(2006.01)i; C09J 133/26(2006.01)i	
Applicant WACKER CHEMIE AG 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 28 March 2019	Authorized officer WANG,Lina
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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:
 - 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 13*ter*.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 13*ter*.1(a)).
 - on paper or in the form of an image file (Rule 13*ter*.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:

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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	<u>1-15</u>	YES
	Claims	<u>None</u>	NO
Inventive step (IS)	Claims	<u>None</u>	YES
	Claims	<u>1-15</u>	NO
Industrial applicability (IA)	Claims	<u>1-15</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations :

- [1] Reference is made to the following documents:
- [2] D1: US2012/0220968A1 30 Aug. 2012 (30.08.2012)
- [3] D2: US2006/0118005A1 08 Jun. 2006 (08.06.2006)
- [4] D1 (See description, paragraphs [0014], [0032], [0037], [0046]) discloses a process for preparing a nonwoven fibrous structure. First, an aqueous emulsion copolymer latex binder is provided comprising a cross-linkable ethylene-vinyl acetate copolymer which is the emulsion polymerization product of from ethylene, vinyl acetate and additional cross-linking co-monomers, then an organic acid is added to the aqueous emulsion copolymer latex binder in an amount of from about 1.0 wt% to 5.0 wt%. Next, the acid-containing aqueous emulsion copolymer latex binder is contacted with a nonwoven fibrous structure to form a latex binder-containing nonwoven fibrous structure. Final, the latex binder-containing nonwoven fibrous structure is cured and crosslinked to form an acid-containing nonwoven fibrous structure. The cross-linking co-monomer include N-methylol amides of acrylic acid and methacrylic acid (such as N-methylol acrylamide and N-methylol methacrylamide), the organic acid include oxalic acid, succinic acid, adipic acid, glutaric acid, tartaric acid and citric acid. In addition, the polymerization is carried out at a pH of between 2-7, preferably between 3-5. In order to maintain the pH range, a buffer system will be used, for example, in the presence of alkali metal acetates, alkali metal carbonates, or alkali metal phosphates.
- [5] D2 (See description, paragraphs [0008]-[0010], [0045], [0056]) provides a polymeric binder for inkjet inks. The polymeric binder includes an aqueous dispersion of polymeric nanoparticles (PNPs). The monomers used for preparing PNPs selected from methylol acrylamide, methylol methacrylamide, etc. In those embodiments wherein methylolacrylamide or methylol methacrylamide is included in the copolymer, a catalyst which is a latent source of acidity, that is, a compound effective to lower the pH of the binder composition under the drying and curing conditions, is included in the binder composition. The catalysts selected from ammonium chloride, ammonium citrate, diammonium phosphate, amine salts of p-toluene sulfonic acid and mixtures thereof.
- [6] 1. Novelty:
- [7] Neither D1 nor D2 discloses an aqueous polymer dispersion containing components A, B, C, therefore, claims 1-15 are novel in the sense of PCT Article 33(2).
- [8] 2. Inventive step
- [9] 2.1 D1 is the closest prior art to the subject matter of claim 1. The subject matter of claim 1 differs from D1 in that: replacing the organic acids with ammonium salt of organic acids and/or inorganic acids. Since the organic acid can promote premature crosslinking of the copolymer of the binder, and the ammonium salt of organic acids and/or inorganic acids can be stably present in the aqueous polymer dispersion, therefore the technical problem actually solved by claim 1 is to improve the stability of the aqueous polymer dispersion. D2 discloses that an ammonium salt of organic acids and/or inorganic acid can be used as a potential catalyst for an aqueous composition containing methylol acrylamide. That is, the ammonium salt of organic acids and/or inorganic acids acts to promotes cross-linking under curing conditions, but remains stable during storage. So D2 gives a revelation of the ammonium salt of organic acids and/or inorganic acids can improve the stability of the aqueous polymer dispersion.

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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**

- [10] Therefore, it is obvious for a person skilled in the art to arrive at the technical solution of claim 1 based on D1 and D2. Namely, the subject matter of claim 1 does not involve an inventive step in the sense of PCT Article 33(3).
- [11] 2.2 The additional features of claim 4-5 are disclosed by D1, the additional features of claims 2-3, 6-9 are readily available to a person skilled in the art by adjustment or selection. Thus, the subject matter of said claims does not involve an inventive step in the sense of PCT Article 33 (3).
- [12] 2.3 D1 also discloses the subject matter of claims 10-12, 14, and it is easy for a person skilled in the art to adjust the feed temperature of C component. Therefore, the subject matter of claims 10-14 does not involve an inventive step in the sense of PCT Article 33(3).
- [13] 2.4 It is also obvious that adhesives for bonding fibrous products are used for bonding fibers and other polymeric material. So the subject matter of claim 15 does not involve an inventive step in the sense of PCT Article 33(3).
- [14] 3. Industrial Applicability
- [15] Claims 1-15 have industrial applicability as defined by PCT Article 33(4) because the subject matter thereof can be made or used in adhesive industry.

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

- [1] Multiple dependent claims 3-9, 13 refer to the preceding multiple dependent claims. Therefore, claims 3-9, 13 do not meet the criteria set out in PCT Rule 6.4 (a).

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- [1] The expressions "preferably", "more preferably" and "greater preferably" used in claims 1, 4-6, 8-9, and 11-14 lead to different protection scopes in every one of the said claims. Therefore, claims 1, 4-6, 8-9, and 11-14 do not meet the criteria set out in PCT Article 6.