

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)**

To:

see form PCT/ISA/220

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

|  |  |  |
|--|--|--|
| International application No.<br>PCT/US2007/003685 | International filing date (day/month/year)<br>13.02.2007 | Priority date (day/month/year)<br>28.02.2006 |
|--|--|--|

International Patent Classification (IPC) or both national classification and IPC  
INV. B41M5/50 B41M5/52

Applicant  
EASTMAN KODAK COMPANY

**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 or 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 usually 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.

**3. For further details, see notes to Form PCT/ISA/220.**

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|---|---|--|
| <p>Name and mailing address of the ISA:</p>  <p>European Patent Office - P.B. 5818 Patentlaag 2<br/>NL-2280 HV Rijswijk - Pays Bas<br/>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br/>Fax: +31 70 340 - 3016</p> | <p>Date of completion of this opinion</p> <p>see form PCT/ISA/210</p> | <p>Authorized Officer</p> <p>Dardel, Blaise</p> <p>Telephone No. +31 70 340-9543</p> |
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**WRITTEN OPINION OF THE  
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**Box No. 1 Basis of the opinion**

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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. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material:
    - on paper
    - in electronic form
  - c. time of filing/furnishing:
    - contained in the international application as filed.
    - filed together with the international application in electronic form.
    - furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto 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.
4. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

|                               |             |             |
|-------------------------------|-------------|-------------|
| Novelty (N)                   | Yes: Claims | <u>1-41</u> |
|                               | No: Claims  |             |
| Inventive step (IS)           | Yes: Claims | <u>1-41</u> |
|                               | No: Claims  |             |
| Industrial applicability (IA) | Yes: Claims | <u>1-41</u> |
|                               | No: Claims  |             |

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following document:

D1: EP-A-1580016

1.

The document D1 is regarded as being the closest prior art to the subject-matter of claims 1 and 41, and shows (the references in parentheses applying to this document): An ink-jet recording element comprising in order, over an absorbent support (cf. paragraph [0038], a porous base layer comprising greater than 50% by weight of the layer of particles (cf. paragraph [0079]) of one or more first materials having a median size particle of 0.9 to 3  $\mu\text{m}$  (cf. paragraph [0076]), said base layer present in an amount of 1 to 30  $\text{g}/\text{m}^2$  (cf. paragraph [0084]), based on dry weight coverage, a porous ink-receiving intermediate layer comprising greater than 50% by weight of the layer of particles (cf. paragraph [0094]) of one or more second materials having a median particle size less than 200 nm (cf. paragraph [0089]), wherein said intermediate layer is present in an amount of 2 to 40  $\text{g}/\text{m}^2$  (cf. paragraph [0095]), and a porous image-receiving upper layer comprising greater than 50% by weight of the layer of a material (cf. paragraph [0065]) having a median particle size of primary colloidal particles of 10 to 60 nm (cf. claim 1), said upper layer being present in an amount of 0.1 to 10  $\text{g}/\text{m}^2$  (cf. paragraph [0101]), the total dry weight coverage of the base layer, the intermediate layer, and the upper layer being 3.1 to 80  $\text{g}/\text{m}^2$  (cf. paragraphs [0084], [0095], and [0101]), the unprinted ink-jet recording element having a high gloss (cf. paragraph [0036]).

The subject-matter of claims 1 and 41 differs from this known ink-jet recording element of D1 in that the image-receiving upper layer comprises both (i) non-aggregated colloidal particles having a median particle size of under 200 nm at least 10% smaller than the particles in the intermediate layer, and (ii) aggregated colloidal particles having a median secondary particle size up to 250 nm and a primary particle size of 7 to 40 nm.

The subject-matter of claims 1 and 41 is therefore new (Article 33(2) PCT).

The effect of the difference between the subject-matter of claims 1 and 41 and the ink-

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AUTHORITY (SEPARATE SHEET)**

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jet recording element of D1 is to increase the ink absorption (cf. page 30 of the description of the present application).

The problem to be solved by the present invention may be regarded as providing an ink-jet recording element having improved ink absorption.

The solution to this problem proposed in claims 1 and 41 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: even though it is mentioned in D1 that fumed alumina can be used in view of gloss and ink absorption (cf. paragraph [0062]), it is not explicitly mentioned that a mixture of aggregated particles and non-aggregated particles can be used, and that such a mixture would have better ink absorption than non-aggregated particles alone and better gloss than aggregated particles alone.

Claims 2-40 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.