

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 June 2001 (07.06.2001)

PCT

(10) International Publication Number
WO 01/39985 A3

- (51) International Patent Classification⁷: B41C 1/10, B41M 5/36
- (21) International Application Number: PCT/US00/32841
- (22) International Filing Date: 4 December 2000 (04.12.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/454,151 3 December 1999 (03.12.1999) US
09/644,600 23 August 2000 (23.08.2000) US
- (71) Applicant: KODAK POLYCHROME GRAPHICS CO. LTD. [BB/US]; 401 Merritt 7, Norwalk, CT 06851 (US).
- (72) Inventors: LEON, Jeffrey, W.; 343 State Street, Rochester, NY 14650 (US). FLEMING, James, C.; 1241 Holly Road, Webster, NY 14580 (US).
- (74) Agents: SORELL, Louis, S. et al.; Baker Botts LLP, 30 Rockefeller Plaza, New York, NY 10112-0228 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
8 November 2001
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 01/39985 A3

(54) Title: HEAT-SENSITIVE IMAGING ELEMENT FOR PROVIDING LITHOGRAPHIC PRINTING PLATES

(57) Abstract: An imaging member, such as a negative-working printing plate or on-press cylinder, can be prepared using a hydrophilic imaging layer comprised of a heat-sensitive hydrophilic polymer that comprises recurring units comprising quaternary ammonium carboxylate groups. In a preferred embodiment, the quaternary ammonium carboxylate groups include at least one substituted -alkylene (C₁-C₃)-phenyl group. The imaging member can also include an infrared radiation sensitive material to provide added sensitivity to heat that can be supplied by laser irradiation in the IR region. The heat-sensitive polymer is considered "switchable" in response to heat, and provides a lithographic image without wet processing.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/32841

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B41C1/10 B41M5/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B41C B41M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, WPI Data, EPO-Internal, CHEM ABS Data, PAPERCHEM, PIRA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 5 910 395 A (M.LI ET AL.) 8 June 1999 (1999-06-08) column 3, line 26 - line 38 column 4, line 14 - line 18 column 5, line 50 - column 7, line 67 claims 1,3,14,20,21 --- | 1, 3-29, 31-34 |
| P, X | EP 1 031 412 A (FUJI PHOTO FILM COMPANY LIMITED) 30 August 2000 (2000-08-30) page 2, line 30 - line 52 page 7, line 52 - page 9, line 35 page 15, line 25 - page 16, line 30 page 17, line 50 - line 54 page 21, line 15 - line 30 claims 1-8 --- -/-- | 1, 3-29, 31-34 |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

22 February 2001

Date of mailing of the international search report

07/03/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Bacon, A

INTERNATIONAL SEARCH REPORT

Int :ional Application No

PCT/US 00/32841

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-----------------------|
| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| P, X | EP 0 980 754 A (FUJI PHOTO FILM COMPANY LIMITED) 23 February 2000 (2000-02-23) page 3, line 16 -page 4, line 3 page 7, line 49 -page 8, line 45 page 17, line 15 -page 18, line 50 claims 1-3 <p style="text-align: center;">-----</p> | 1, 3-29, 31-34 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Patent Application No

PCT/US 00/32841

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|--|--|
| US 5910395 A | 08-06-1999 | US 6027857 A US 5925497 A US 5849462 A AU 693343 B AU 5253796 A CA 2218752 A CN 1182485 A DE 69605909 D EP 0823070 A JP 11504435 T NO 974763 A WO 9634316 A | 22-02-2000 20-07-1999 15-12-1998 25-06-1998 18-11-1996 31-10-1996 20-05-1998 03-02-2000 11-02-1998 20-04-1999 29-12-1997 31-10-1996 |
| EP 1031412 A | 30-08-2000 | JP 2000309176 A | 07-11-2000 |
| EP 980754 A | 23-02-2000 | JP 2000122272 A | 28-04-2000 |