

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
FERRANIA TECHNOLOGIES S.p.A.	03/14/2012
RECEIVING PARTY DATA	
Name:	Parco Tecnologico Val Bormida S.r.l.
Street Address:	Viale della Liberta 57
Internal Address:	Frazione Ferrania
City:	Cario Montenotte
State/Country:	ITALY
PROPERTY NUMBERS Total: 11	
Property Type	Number
Patent Number:	5882846
Patent Number:	5332656
Patent Number:	5821042
Patent Number:	6020115
Patent Number:	6387473
Patent Number:	6348305
Patent Number:	6518005
Patent Number:	6511796
Patent Number:	6670111
Patent Number:	6815154
Patent Number:	7862868
CORRESPONDENCE DATA	
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CH \$440.00 5882846

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Correspondent Name: Mark A. Litman and Associates, P.A.

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ATTORNEY DOCKET NUMBER:

FERRANIA_ASSIGNMENT

NAME OF SUBMITTER:

Mark A. Litman

Total Attachments: 16

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ASSIGNMENT OF INVENTION

THIS Assignment is effective the 14th day of March 2012.

BETWEEN

FERRANIA TECHNOLOGIES S.p.A., of Viale della Libertà 57, Frazione Ferrania, Cairo Montenotte, Italy, an Italian company duly incorporated under the laws of Italy ("Assignor"), and

PARCO TECNOLOGICO VAL BORMIDA S.r.l., of Viale della Libertà 57, Frazione Ferrania, Cairo Montenotte, Italy, an Italian company.

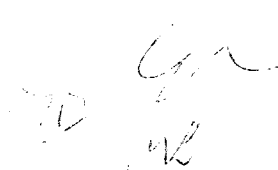
WHEREAS on 15th October 2009, with notarial deed of incorporation before Notary Paolo Torrente of Genoa (Italy) No. 10590/5447, Ferrania Technologies S.p.A. ("Assignor") incorporated a newly company under the registered name of Parco Tecnologico Val Bormida S.r.l. ("Assignee").

WHEREAS with the same deed of incorporation, the Assignor subscribed the quota capital of the Assignee by the contribution of the business unit formerly owned by Assignor, relating to research activities, consisting of material assets and usage rights, immaterial assets and studies, research units (the "Business Unit").

WHEREAS simultaneously with the execution of the aforesaid deed of incorporation, the Business Unit was assigned and transferred from the Assignor to the Assignee.

WHEREAS the Business Unit transferred includes, *inter alia*, the United States Patents set forth in Appendix A; and in the inventions claimed therein.

WHEREAS the Assignor wants to file an assignment document with the United State Patent and Trademark Office in order to obtain the registration of the Assignee as the


PATENT

REEL: 027901 FRAME: 0695

owner of the aforesaid Patents comprised in the Business Unit already transferred starting from 15th October 2009.

THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, Assignor does hereby assign and recognize the assignment unto Assignee starting from 15th October 2009 of said inventions claimed in said patents, and all reissues thereof, all of which are encompassed herein by the term "Patents", the same to be held and enjoyed by Assignee as fully and entirely as the same would have been held and enjoyed by Assignor had the assignment not been made. The patents comprised in the Business Unit already assigned include 100% of the right, title and interest in:

<u>US PATENT NO.</u>	<u>ASSIGNMENT RECORDATION</u>	
	<u>REEL/FRAME</u>	<u>DATE (MM/DD)</u>
US 5,882,846	027725/0738	17/02/2012
US 5,332,656	027725/0738	17/02/2012
US 5,821,042	027725/0738	17/02/2012
US 6,020,115	027725/0738	17/02/2012
US 6,387,473	027725/0738	17/02/2012
US 6,348,305	027725/0738	17/02/2012
US 6,518,005	027725/0738	17/02/2012
US 6,511,796	027725/0738	17/02/2012
US 6,670,111	027725/0738	17/02/2012
US 6,815,154	027725/0738	17/02/2012
US 7,862,868	019751/0489	06/12/2008

AND, for the consideration aforesaid, Assignor does hereby agree that we and our executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its

successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

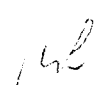
AND, furthermore Assignor covenants and agrees with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by us and that full right to convey the same as herein expressed is possessed by us, it being understood that Assignor hereby represents and warrants that it is legitimately entitled to assign the Patents according to all applicable laws, so that, as a consequence of the execution and filing by the Assignor with the competent office of this assignment document, the Assignee will be legitimately registered as the owner of the Patents at the Patents United State Patent and Trademark Office.

The below-named individual is an Officer of FERRANIA TECHNOLOGIES S.p.A. with the title of Chief Executive Officer and authority under the corporate Laws and policies to convey complete right and title to any and all Intellectual property, including U.S. Patents and Patent Applications.

This document shall be construed, interpreted and applied in accordance with the laws of the State of Italy and will be subject to Genoa Court jurisdiction.

IN WITNESS WHEREOF, the parties have caused their respective corporate names to be affixed hereto and this instrument to be signed by their duly authorized officers as of the day and year written below.

Signed this 14th day of March, 2012.



PATENT
REEL: 027901 FRAME: 0697

FERRANIA TECHNOLOGIES S.p.A.

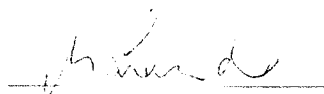
By



(Giuseppe Cortesi)

Title: CEO

Witnessed by

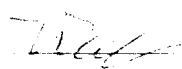


(Mauro Leandro)

Signed this 14th day of March, 2012.

PARCO TECNOLOGICO VALBORMIDA S.r.l.

By



(Federico Delfino)

Title: CEO

Witnessed by:



(Francesca Pallanca)

APPENDIX A

Appl. Nbr.	Appl. Date	Title	Docket Nbr.	Ctry	Filing Nbr.	Status	Patent Nbr.
08/001854	01/08/1993	Infrared Sensitive Silver Halide Photographic Elements	48294	US	01	G	5882846
08/034726	03/22/1993	Silver Halide Color Photographic Light-Sensitive Material	48345	US	01	G	5332656
08/862118	05/22/1997	Silver Halide Color Photographic Element Having Improved Bleachability	52721	US	01	G	5821042
09/102846	06/23/1998	Light-Sensitive Silver Halide Color Photographic Elements	10021	US	01	G	6020115
09/642684	08/21/2000	Receiving Sheet for Inkjet Printing Comprising Surfactant	1003	US	01	G	6387473
09/770011	01/25/2001	Photographic element with a layer improving the adhesion	1008	US	01	G	6348305
09/877467	06/08/2001	New Yellow Dyes For Filter Layers In Color Negative Films	1010	US	01	G	6518005
09/861920	05/21/2001	Color Photographic Element	1011	US	01	G	6511796
10/236622	09/05/2002	Photographic Dispersion for Yellow Filter Dyes	1016	US	01	G	6670111
10/627164	07/25/2003	Silver Bromotiodide Core-Shell Grain Emulsion	1022	US	01	G	6815154
11/814119	07/17/2007	Ink-jet Recording Material	1035	US	01	G	7862868

642 4 2



US005882846A

United States Patent [19]

Vacca et al.

[11] **Patent Number:** **5,882,846**[15] **Date of Patent:** ***Mar. 16, 1999**[54] **INFRARED SENSITIVE PHOTOGRAPHIC ELEMENTS**[75] **Inventors:** Alberto Vacca, Carcare, Marino Rossi, Paliare, both of Italy[73] **Assignee:** Imation Corp., Oakdale, Minn.[*] **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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4,264,719	3/1981	Kameoka et al.	430,961
4,619,892	10/1986	Simpson et al.	430,500
4,711,838	12/1987	Grzeskowiak et al.	
4,777,113	10/1988	Inoue et al.	430,961
4,847,191	7/1989	Grzeskowiak	430,608
4,906,523	3/1990	Ikegawa et al.	430,401
4,975,367	12/1990	Parton et al.	430,584
4,999,287	3/1991	Sato et al.	430,569
5,013,642	9/1991	Muenter et al.	430,584
5,061,248	10/1991	Parton et al.	430,584
5,108,870	4/1992	Inoue et al.	430,264
5,149,619	9/1992	Mihara et al.	430,584
5,227,286	7/1993	Kano et al.	430,523
5,300,411	3/1994	Sternan et al.	430,961

[21] **Appl. No.:** 1,854[22] **Filed:** Jan. 8, 1993[30] **Foreign Application Priority Data**

10/13,1992 [11] Italy MP/2A/259

[51] **Int. Cl.** G03C 1/20, G03C 1/76, G03C 5/16[52] **U.S. Cl.** 430,538, 430,523, 430,539, 430,584, 430,941, 430,950, 430,961, 430,631[58] **Field of Search** 430,523, 941, 430,507, 508, 584, 950, 539, 631, 961, 538[56] **References Cited****U.S. PATENT DOCUMENTS**

3,953,662	9/1962	Mackey et al.	430,527
3,591,476	7/1971	Plakow	430,961
4,199,449	2/1980	Naor et al.	434,961

FOREIGN PATENT DOCUMENTS

0,334,400 9/1989 European Pat. Off.

Primary Examiner—Janet C. Baxter
Attorney, Agent or Firm—William K. Werner

[57] **ABSTRACT**

Infrared sensitive photographic elements comprise an opaque film support, an infrared sensitized silver halide emulsion layer and a hydrophilic colloid protective layer on one side of the film support, said protective layer comprising colloidal silica having an average particle size lower than 15 nanometers.

The elements have an increased exposure latitude upon exposure to infrared laser diodes, and higher maximum density upon photographic processing.

8 Claims, No Drawings**PATENT****REEL: 027901 FRAME: 0700**



US005332656A

United States Patent [19]

[11] Patent Number: 5,332,656

Bertoldi et al.

[45] Date of Patent: Jul. 26, 1994

[54] SILVER HALIDE COLOR PHOTOGRAPHIC
LIGHT-SENSITIVE MATERIAL4,980,267 12/1990 Taber 430/549
5,006,452 4/1991 Buccieri 430/544[75] Inventors: Massimo Bertoldi, Fossano, Vinicio
Busatto, Savona, both of Italy

FOREIGN PATENT DOCUMENTS

[73] Assignee: Minnesota Mining and
Manufacturing Company, St. Paul,
Minn.356925 3/1990 European Pat. Off.
070419 11/1990 Japan
2099167 12/1982 United Kingdom

[21] Appl. No.: 34,726

Primary Examiner—Richard L. Schilling
Attorney, Agent, or Firm—Gary L. Griswold, Walter N.
Kinn, Mark A. Litman

[22] Filed Mar. 22, 1993

[30] Foreign Application Priority Data

Apr. 7, 1992 [IT] Italy M192A00539

[51] Int. Cl. G03C 7/36

[52] U.S. Cl. 430/544; 430/549,
430/557, 430/957

[58] Field of Search 430/544, 549, 957

[56] References Cited

U.S. PATENT DOCUMENTS

3,617,291 11/1971 Sawdey 430/544
4,022,620 5/1977 Okumura et al. 430/389
4,477,563 10/1984 Ichijima et al. 430/544
4,524,130 6/1985 Iwasa 430/544
4,806,459 2/1989 Makino et al. 430/549

[57] ABSTRACT

Silver halide color photographic light-sensitive material which comprises a support having thereon at least one silver halide emulsion layer containing a) a diacylaminoethylene yellow dye forming coupler having bonded to the coupling active position a group which provides a compound having a development inhibiting property when the group is released from the coupler active position upon the color development reaction, wherein said group is a 4,7-dihalo-2-benzotriazolyl group and b) an alkoxybenzoyl acetanilide yellow dye forming coupler having a 3-hydantoinyl leaving group bonded to the coupling active position.

3 Claims, No Drawings



US005821042A

United States Patent [19]

Massirio et al.

[11] Patent Number: **5,821,042**[45] Date of Patent: **Oct. 13, 1998**[54] **SILVER HALIDE COLOR PHOTOGRAPHIC
ELEMENT HAVING IMPROVED
BLEACHABILITY**2,500,340 3/1996 Szajewski et al. 430,393
5,361,031 10/1996 Brown 430,379

FOREIGN PATENT DOCUMENTS

[75] Inventors: Sergio Massirio, Ennio Lagore,
Massimo Bertoldi, Tossano; Giovanni
Giusto, Altare; Emilio Prosperi,
Genova Voltri; Roberto Sardelli,
Savona, all of Italy0,163,389 A2 9/1986 European Pat. Off. G03C 7/37
0,566,419 A1 10/1993 European Pat. Off. G03C 7/37
85,029,805 3/1985 Japan G03C 7/37

OTHER PUBLICATIONS

[73] Assignee: Imation Corp., Oakdale, Minn.

Research Disclosure 31349, Anonymous, "Bleach acceler-
ation releasing compounds", Oct. 1973[21] Appl. No. **862,118**Research Disclosure 24241, Robert Follet, Amosch Van-
dergenghie and Plet Kok, "Compounds capable of releasing
a development-influencing moiety", Jun. 1984[22] Filed **May 22, 1997**

[30] Foreign Application Priority Data

Primary Examiner: Mark J. Hall
Attorney Agent or Firm: William K. Weimer

Jan. 29, 1997 [EP] European Pat. Off. 96110284

[51] Int. Cl. **G03C 1/43**, G03C 1/183
G03C 8/44[52] U.S. Cl. **430:510**, 430:393, 430:430,
430:461[58] Field of Search 430:510, 393,
430:430, 461

[56] References Cited

U.S. PATENT DOCUMENTS

3,893,888 7/1975 Wabnitz et al. 430:393
4,163,669 8/1979 Kanada et al. 430:393
4,293,691 10/1981 Hamachi et al. 541:140
4,867,986 9/1989 Harder et al. 430:430
4,923,784 8/1990 Harder et al. 430:430
5,063,145 11/1991 Sakano et al. 430:505
5,297,287 11/1993 Deguchi et al. 430:504
5,286,859 2/1994 Bepko et al. 541:140
5,459,022 10/1995 Ishii et al. 430:529
5,464,733 11/1995 Enday 430:507

[57] ABSTRACT

A multilayer silver halide color photographic element com-
prises: a support having coated thereon a silver antihalation
layer, an interlayer, at least two red-sensitive silver halide
emulsion layers, at least two green-sensitive silver halide
emulsion layers, a yellow filter layer, and at least two
blue-sensitive silver halide emulsion layers, wherein the
interlayer provided between the silver antihalation layer and
the red-sensitive silver halide emulsion layer closest to the
support contains a bleach accelerator-releasing compound,
and the silver antihalation layer contains a water-soluble
organic thiol.The invention provides reduction in residual silver levels
and backside turbidity after processing, without deleterio-
usly affecting sensitometric properties of the photographic
element.**12 Claims, No Drawings****PATENT****REEL: 027901 FRAME: 0702**



US006020115A

United States Patent

Orengo et al.

[11] Patent Number: 6,020,115

[45] Date of Patent: Feb. 1, 2000

[54] LIGHT-SENSITIVE SILVER HALIDE COLOR PHOTOGRAPHIC ELEMENTS CONTAINING 2-EQUIVALENT 5-PYRAZOLONE MAGENTA COUPLERS

[75] Inventors: Ferdinando Orengo, Altare, Luisa Favella, Bortezzo, Antonio Poggi, Giuliano-Valleggia, all of Italy

[73] Assignee: Tulalip Consultoria Comercial Sociedade Unipessoal, Portugal

[21] Appl. No. 09/102,846

[22] Filed: Jun. 23, 1998

[30] Foreign Application Priority Data

Jun. 30, 1997 [EP] European Pat. Off. 97118746

[51] Int. Cl. G03C 1/08

[52] U.S. Cl. 430 509, 430 506, 430 555, 430 544, 430 957

[58] Field of Search: 430 504, 506, 430 543, 555, 544, 957, 509

[56] References Cited

U.S. PATENT DOCUMENTS

4,574,378	7/1989	Sauerberg et al.	430 506
4,804,619	7/1989	Yonada et al.	430 506
4,963,465	10/1990	Mateja et al.	430 506
5,848,213	8/1999	Edwards	430 506
5,963,026	10/1999	Singer	430 506

FOREIGN PATENT DOCUMENTS

0 641 181 A1 12/1994 European Pat. Off.
0 747 771 A1 11/1996 European Pat. Off.

198-43,200

Altare, Italy

Primary Examiner—Gerardine Feischer

[57] ABSTRACT

Multilayer color photographic element having on a support base blue-, green- and red-sensitive silver halide emulsion layers, respectively associated with non-diffusing yellow-, magenta- and cyan dye-forming couplers, wherein (a) the green-sensitive silver halide emulsion layer comprises three green-sensitive silver halide emulsion layers, respectively uppermost, intermediate and lowermost, sensitive to the same spectral region of visible light, in which the sensitivity of the three green-sensitive silver halide emulsion layers decreases in order from the uppermost silver halide emulsion layer to the lowermost silver halide emulsion layer, (b) each of the three green-sensitive silver halide emulsion layers contains an 4-phenyl-3-anilino-1-phenylthio-5-pyrazolone magenta dye-forming coupler, (c) the weight ratio of the coupler to silver halide (expressed as silver) in the highest sensitivity uppermost green-sensitive silver halide emulsion layer is higher than the weight ratio of the coupler to silver halide (expressed as silver) in the medium sensitivity intermediate green-sensitive silver halide emulsion layer, and (d) the highest sensitivity uppermost green-sensitive silver halide emulsion layer contains a DIR coupler.

The color photographic elements containing the aforesaid layer arrangement provide good speed-grainularity relationship, good interimage effects, and less changes in the photographic properties such as decrease in color density and increase in fog when brought in contact with formaldehyde gas during storage prior to color development.

14 Claims, No Drawings

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US006387473B1

(15) **United States Patent**
Sismondi et al.

(10) Patent No.: **US 6,387,473 B1**
(45) Date of Patent: **May 14, 2002**

(54) **RECEIVING SHEET FOR INK-JET
PRINTING COMPRISING A SURFACTANT
COMBINATION**

(75) Inventors: **Alain Dominique Sismondi, Nice (FR);
Stefania Ghirardo, Giuseppe Loviglio,
both of Savona (IT)**

(73) Assignee: **Ferrania S.p.A., Ferrara (IT)**

(71) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 52 days.

(21) Appl. No. **09/642,684**

(22) Filed **Aug. 21, 2000**

(30) Foreign Application Priority Data

Sep. 3, 1999 (IT) **SA/99A0126**

(51) Int. Cl. **B41M 5/00**

(52) U.S. Cl. **428/195, 428/212, 428/341,
428/342**

(58) Field of Search **428/195, 212,
428/341, 342**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,781,985 A	11/1985	Desjarlais	428/321
5,133,803 A	7/1992	Moffatt	406/25
5,880,372 A	12/1996	Gino et al.	406/20 R
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5,707,722 A	1/1998	Iqbal et al.	428/304.4

6,377,796 A 3/1999 Tsuchiya et al. 347/108

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EP	0761460	6/1999
WO	WO/94/24667	1/1994
WO	WO/96/16355	8/1996

OTHER PUBLICATIONS

Abstract for Japanese Patent JP08103055, Entitled Ink Jet
Recording Sheet, Inventor: Koyama Toshiya, Filed Oct. 5,
1994, Published Apr. 23, 1995.

Abstract for Japanese Patent JP07147434, Entitled Ink Jet
Recording Sheet, Inventors: Yoshida Yasumune, Tomimasa
Hiroshi, Kojima Osamu, Filed Nov. 19, 1993, Published
May 30, 1995.

* cited by examiner

Primary Examiner—Bruce H. Hess

Attorney, Agent, or Firm—Mark A. Ferman & Assoc.
P.A.

(57) **ABSTRACT**

The present invention refers to an ink jet receiving sheet for
ink-jet printers comprising a support and at least two ink
receiving layers, wherein the ink receiving layer furthest
from the support comprises a first non-ionic surfactant
having a dynamic surface tension lower than or equal to 27
dyne/cm², and in that the other ink receiving layer(s)
comprise(s) a second non-ionic surfactant having a dynamic
surface tension higher than or equal to 30 dyne/cm². The ink
jet receiving sheet of the invention provides minimum bleed,
no mottle and good glossiness.

9 Claims, No Drawings

filed



US006348305B2

(12) **United States Patent**
Puppo et al.

(10) Patent No.: **US 6,348,305 B2**
(15) Date of Patent: **Feb. 19, 2002**

(54) **PHOTOGRAPHIC ELEMENT WITH A LAYER IMPROVING THE ADHESION TO THE SUPPORT BASE**

(72) Inventors: **Paola Puppo, Genoa; Alberto Valsecchi, Carlo Barinco, both of Savona, all of (IT)**

(73) Assignee: **Ferrania, S.p.A., Ferrara (IT)**

(57) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No. **09/770,011**

(22) Filed **Jan. 25, 2001**

(30) **Foreign Application Priority Data**

Feb. 15, 2000 (IT) **SV/2000/0001**

(51) Int. Cl. **G03C 1/93, G03C 1/85, G03C 1/795, B32B 27/00, B32B 27/40**

(52) U.S. Cl. **430/527, 430/531, 430/533, 428/420, 428/423.1, 428/423.5, 428/423.7, 428/428.5**

(58) Field of Search **430/531, 533, 430/527, 428/420, 423.5, 423.7, 423.1**

(59) **References Cited**

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4,695,532 A	9/1987	Ponticello et al.	430/533
4,962,893 A	7/1990	Vermeulen et al.	430/533
5,194,347 A	8/1993	Vermeulen et al.	430/533
5,204,219 A	3/1993	Van Ooij et al.	430/533
5,378,292 A	1/1995	Nakanishi et al.	430/533
5,451,495 A	9/1995	Takner et al.	430/533
5,510,233 A	4/1996	Nakanishi et al.	430/533
5,532,118 A	7/1996	Bauer et al.	430/533
5,633,589 A	6/1997	Bauer et al.	430/533
5,707,791 A	3/1998	Ito et al.	430/533
5,726,001 A	3/1998	Eichorst	430/533
6,187,734 B1	7/2001	Park	430/533

* cited by examiner

Primary Examiner - Richard L. Schilling
(74) *Attorney Agent or Firm* - Mark A. Linnan & Assoc. P.A.

(57) **ABSTRACT**

A photographic element comprising a film support base, an adhesion promoting layer, a subbing layer and at least one light-sensitive silver halide emulsion layer, wherein the adhesion promoting layer is close to the support and contains a silane compound and a polyurethane, and the subbing layer, selected within the group consisting of a hydrophobic colloidal layer or a layer comprising a continuous gelled network of inorganic particles, is positioned between the adhesion promoting layer and the emulsion layer.

The present invention also refers to a photographic element comprising a film support base having coated on one side thereof at least one light-sensitive silver halide emulsion layer and on the opposite side thereof an adhesion promoting layer and at least one auxiliary layer, wherein the adhesion promoting layer is close to the support and contains a silane compound and a polyurethane.

The present invention further refers to a film support base having coated on at least one side thereof an adhesion promoting layer and a subbing layer, wherein the adhesion promoting layer is close to the support and contains a silane compound and a polyurethane and the subbing layer is selected within the group consisting of a hydrophobic colloidal layer or a layer comprising a continuous gelled network of inorganic particles.

Finally, the present invention also refers to a film support base having coated on one side thereof an adhesion promoting layer and at least an auxiliary layer, wherein the adhesion promoting layer is close to the support and contains a silane compound and a polyurethane binder and the auxiliary layer is an antistatic layer, a magnetic layer, a protective layer or a lubricant layer.

The adhesion of the emulsion layers and/or of the auxiliary layers to the support base is improved both under wet and dry conditions.

20 Claims, No Drawings



US006518005B2

(12) **United States Patent**
Cavalleri et al.(10) Patent No.: **US 6,518,005 B2**
(45) Date of Patent: **Feb. 11, 2003**(54) **SILVER HALIDE MULTILAYER COLOR PHOTOGRAPHIC MATERIAL**(75) Inventors: **Piero Cavalleri, Piero Di Icco (IT),
Raffaella Biavasco, Savona (IT),
Stefano Parodi, Pont Saint Martin (IT)**(73) Assignee: **Ferrania, S.p.A. (IT)**

(41) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 12 days.

(21) Appl. No. **09/877,467**(22) Filed: **Jun. 8, 2001**(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**Jun. 7, 2000 (IT) **SA/2000A31**(51) Int. Cl. **G03C 1/46**(52) U.S. Cl. **430/506, 430/510, 430/517,
430/522**(58) Field of Search **430/502, 503,
430/506, 510, 517, 522**(56) **References Cited****U.S. PATENT DOCUMENTS**

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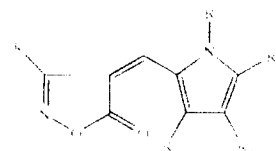
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P.A.**(57) **ABSTRACT**

The present invention refers to photographic elements having, coated on a support base, at least one silver halide emulsion layer sensitized to a radiation different from the blue one in addition to its intrinsic sensitivity to the blue region, and a yellow filter layer positioned between said at least one silver halide emulsion layer and the exposure source, where such yellow filter layer contains a yellow filtering dye represented by the formula (I):



Formula (I)

wherein R and R₁ each independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkylene group, a substituted or unsubstituted heterocyclic group or a substituted or unsubstituted aryl group, R₂, R₃ and R₄ each independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted aryl group and R₂ and R₃ may be combined to form a 6-membered ring.

6 Claims, No Drawings



US 6,511,796 B2

(12) **United States Patent**
Rocca et al.

(10) Patent No.: **US 6,511,796 B2**
 (45) Date of Patent: **Jan. 28, 2003**

(51) **COLOR PHOTOGRAPHIC ELEMENT**

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(73) Assignee: **Ferrania S.p.A., Savona (IT)**

(71) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No. **09 861,920**

(22) Filed **May 21, 2001**

(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

Jun. 21, 2000 (IT) **SA 2000A/36**

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(58) Field of Search **430/506, 567, 513, 553, 555, 505**

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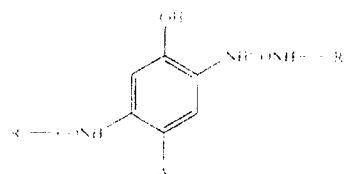
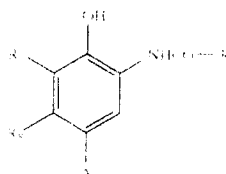
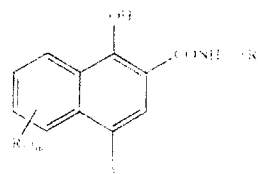
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Primary Examiner: Geraldine Leischer

(74) Attorney Agent or Firm: Mark A. Litman & Assoc., P.A.

(57) **ABSTRACT**

The invention provides a multilayer silver halide color photographic element comprising a support having coated thereon at least two red-sensitive silver halide emulsion layers having different sensitivity to red light, characterized in that the most sensitive of said red-sensitive silver halide emulsion layers comprises a core-shell silver bromoniodide tabular emulsion having a pure bromide core, a total silver iodide content lower than 10% and an aspect ratio higher than 1.0 and a Speed Enhancing (SE) cyan coupler represented by one of the following general formulas:



wherein A represents (TIME)_n-S-R₁-R₂, TIME being a timing group releasing S-R₁-R₂ with delay under developing conditions, n represents 0 or 1, R₁ is a divalent linking group and R₂ represents a water-solubilizing group or -NR₃-R₄, wherein R₃ and R₄, which may be the same or different, each represents a hydrogen atom or an aliphatic group having from 1 to 3 carbon atoms, R₅ and R₆ represent a non-diffusible ballasting group, R₇ represents a group capable of substituting a hydrogen atom of the naphthol ring, m represents 0 to 3, R₈ represents hydrogen or a halogen atom, R₉ represents an alkyl group, and R10 represents an aryl group.

The invention provides enhanced sensitometric properties, such as reduced formation of fog, increased speed and increased sensitivity.

6 Claims, No Drawings

10/28/01
 198



US006670111B2

(12) **United States Patent**
Balestra et al.

(10) Patent No.: **US 6,670,111 B2**
(45) Date of Patent: **Dec. 30, 2003**

(54) **PHOTOGRAPHIC DISPERSIONS FOR
YELLOW FILTER DYES**

(75) Inventors: **Corrado Balestra, Millesimo (IT);
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(73) Assignee: **Ferrania, S.p.A., Savona (IT)**

(71) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No. **10/236,622**

(22) Filed **Sep. 5, 2002**

(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

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SV 2001A0038

(51) Int. Cl. **G03C 1/40, G03C 1/38,
G03C 1/83, G09K 13/00, G09D 105/00**

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8/577, 8/579, 106/31/36, 106/31/94, 106/146/1,
106/146/1, 106/162/1, 106/217/5**

(58) Field of Search **430/222, 507,
430/522, 639, 517, 516, 106/31/36, 31/94,
146/1, 146/1, 217/5, 162/1, 8/577, 579**

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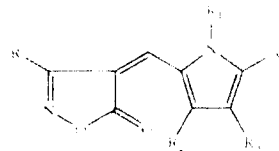
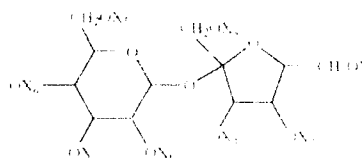
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Primary Examiner—Richard L. Schilling

(74) Attorney Agent in Firm—Mark A. Lerman & Assoc.
P.A.

(57) **ABSTRACT**

The present invention refers to a process for preparing a dispersion which comprises codispersing in an aqueous medium a sucrose derivative represented by the following general formula (1), wherein substituents X_1 to X_6 being the same or different, are represented by a hydrogen atom, an alkyl group or an acyl group, with the proviso that at least four of the X_1 to X_6 substituents are different from hydrogen and that the total sum of the carbon atoms of X_1 to X_6 substituents is at least sixteen; and a photographic compound represented by the following general formula (2), wherein R and R₁ each independently represent a hydrogen atom, an alkyl group, an alkylene group, a heterocyclic group or an aryl group, R₂, R₃, and R₄ each independently represent a hydrogen atom, an alkyl group, an aryl group and R₁ and R₂ may be combined to form a 6-membered ring.



The present invention also refers to a photographic dispersion comprising a sucrose derivative represented by previous general formula (1) and a photographic compound represented by previous general formula (2) dispersed in an aqueous medium and to a photographic element comprising a film support base having coated on one side thereof at least one hydrophilic colloid emulsion layer comprising said photographic dispersion. The process of the present invention allows photographic dispersions to display a narrow drop size distribution curve even when stored for a long period of time (30 days) in cold room.

16 Claims, No Drawings

PATENT

REEL: 027901 FRAME: 0708



US006815154B2

(11) **United States Patent**
Pirotto et al.

(16) **Patent No.:** **US 6,815,154 B2**
(15) Date of Patent: **Nov. 9, 2004**

(54) **SILVER BROMIODIDE CORE-SHELL
 GRAIN EMULSION**

(75) **Inventors:** **Davide Pirotto, Carcare (IT);**
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(71) **Notice:** Subject to any disclaimer, the term of this
 patent is extended or adjusted under 35
 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **10-627,164**

(22) **Filed:** **Jul. 25, 2003**

(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.** **430/506, 430/567, 430/569**

(58) **Field of Search** **430/567, 569,**
430/506

(56) **References Cited**

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EP	1,103,950 A1	5/2001	G10K 11/34
EP	1,262,825 A1	11/2002	G03C 1/36

Classified by examiner

Primary Examiner: Richard L. Scilling

(74) Attorney, Agent, or Firm: Mark A. Funnell &
 Associates, P.A.

(57) **ABSTRACT**

The present invention relates to a light sensitive emulsion and a light sensitive photographic material containing the same, comprising silver bromiodide grains of a core-shell structure comprising: (a) an inner core consisting essentially of silver bromide or silver bromiodide and having a silver iodide content within the range of 0 to 10 mole %, and (b) a plurality of shells consisting essentially of silver bromide or silver bromiodide, wherein said silver bromiodide grains exhibit an average grain size lower than 0.60 micrometer, an average grain thickness lower than 0.15 micrometer, and an average aspect ratio lower than 5.0.

10 Claims, No Drawings

6/27
10/27



US00786286B2

(12) **United States Patent**
Balestra et al.

(10) **Patent No.:** **U S 7,862,868 B2**

(45) **Date of Patent:** **Jan. 4, 2011**

(54) **INK-JET RECORDING MATERIAL**

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(55) **Assignee:** **Terrania Technologies, S.p.A.**,
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(56) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
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(62) **Pub. Filed:** **Jan. 13, 2006**

(63) **Pub. No.:** **PC 1/E P2006/000259**

(64) **Pub. Date:** **Jul. 17, 2007**

(65) **Pub. No.:** **WO2006/077052**

(66) **Pub. Date:** **Jul. 27, 2006**

(67) **Prior Publication Data:**

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B41M 5/40 (2006.01)

(70) **U.S. Cl.:** **428/32.28**, **428/32.34**, **428/32.38**,
428/32.39, **428/33.1**

(71) **Field of Classification Search:** **428/32.28**,
428/32.34, **32.38**, **32.39**, **33.1**

See application file for complete search history.

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Primary Examiner: Metelhem Shehared.

(74) **Attorney, Agent or Firm:** Robert C. Hardman, Busch Blackwell LLP

(57) **ABSTRACT**

The present invention relates to an ink-jet recording material comprising a support, and at least one ink-receiving porous layer coated on the support, wherein at least one porous layer comprises, dispersed therein, an organic solvent having a $\log P$ value higher than 2.00, an antifading component, a non-ionic surfactant having low EOPIC, an anionic surfactant, and a carboxylic derivative.

45 Claims, No Drawings