

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 November 2001 (15.11.2001)

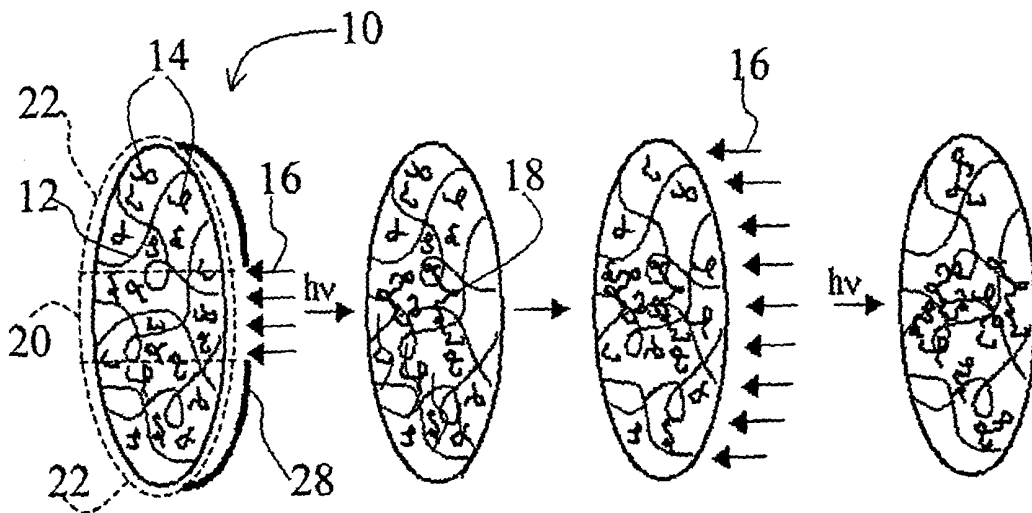
PCT

(10) International Publication Number
WO 01/86647 A3

- (51) International Patent Classification⁷: G11B 7/00, (74) Agents: PECK, John, W. et al.; Christie, Parker & Hale, LLP, P.O. Box 7068, Pasadena, CA 91109-7068 (US).
G11C 13/04, G03H 1/02, G11B 7/24
- (21) International Application Number: PCT/US01/15419 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, 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.
- (22) International Filing Date: 10 May 2001 (10.05.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/203,317 10 May 2000 (10.05.2000) US (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).
- (71) Applicant: CALIFORNIA INSTITUTE OF TECHNOLOGY [US/US]; 1200 East California Boulevard, Mail Stop 201-85, Pasadena, CA 91125 (US).
- (72) Inventors: SANDSTEDT, Christian, A.; 680 S. Marengo Avenue, #10, Pasadena, CA 91106 (US). JETHMALANI, Jagdish, M.; 85 N. Madison Avenue, #48, Pasadena, CA 91101 (US). KORNFIELD, Julia, A.; 371 S. Berkeley Avenue, Pasadena, CA 91107 (US). GRUBBS, Robert, H.; 1700 Spruce Street, South Pasadena, CA 91030 (US).
- Published:
— with international search report
- (88) Date of publication of the international search report:
21 March 2002

[Continued on next page]

(54) Title: PHASE CONTRAST VARIATION OF A PHOTO-INDUCED REFRACTIVE MATERIAL



(57) Abstract: The present invention relates to compositions useful for optically recording or storing data by stimulating a composition having a refraction modulating composition, where a stimulated region of the composition represents one kind of data and a non-stimulated region of the composition represents another kind of data. The present invention also relates to methods of optically recording data utilizing the compositions of the present invention, as well as to optical data storage devices and optical data storage elements which utilize the optical data storage compositions of the invention.

WO 01/86647 A3



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.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/15419

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B7/00 G11C13/04 G03H1/02 G11B7/24

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 G11B G11C G03F G03H

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)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 99 26112 A (POLAROID CORP) 27 May 1999 (1999-05-27)</p> <p>abstract page 1, line 1 - line 17 page 6 -page 9, line 24 page 10; example 1</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	<p>1-5,7,9, 13-19, 24-28, 30,32, 35-44, 46,49, 50,52, 53,56, 57,60-62</p>



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.

Z document member of the same patent family

Date of the actual completion of the international search

26 November 2001

Date of mailing of the international search report

07/12/2001

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

Vogt, C

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/US 01/15419

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 702 846 A (KAWABATA MASAMI ET AL) 30 December 1997 (1997-12-30) abstract column 3, line 2 - line 55 column 5, line 6 - line 46 column 7, line 10 - line 24 column 9 -column 10; table 2 column 11 -column 12; table 2 ---	1-6, 13-19, 24-29, 35-43, 49, 50, 52, 53, 56, 57, 60, 61
P, X	WO 00 41650 A (KORNFELD JULIA A ;SANDSTEDT CHRISTIAN A (US); SCHWARTZ DANIEL M () 20 July 2000 (2000-07-20) page 7, line 28 -page 10, line 14 claims 1,5,6,8,11-16 ---	24-38
X	DATABASE WPI Section Ch, Week 199625 Derwent Publications Ltd., London, GB; Class A26, AN 1996-248240 XP002184051 & JP 08 101499 A (NIPPON PAINT CO LTD), 16 April 1996 (1996-04-16) abstract ---	1,2,7, 12-19, 24,25, 30, 36-40, 44,49, 50,52, 53,56, 57,60,61
X	DATABASE WPI Section Ch, Week 199625 Derwent Publications Ltd., London, GB; Class A89, AN 1996-248244 XP002184052 & JP 08 101503 A (NIPPON PAINT CO LTD), 16 April 1996 (1996-04-16) abstract ---	1,2,12, 14-16, 18,19, 24,25, 36-40, 49,52, 53,56, 60,61
X	DATABASE WPI Section Ch, Week 199625 Derwent Publications Ltd., London, GB; Class A89, AN 1996-248243 XP002184053 & JP 08 101502 A (NIPPON PAINT CO LTD), 16 April 1996 (1996-04-16) abstract --- -/--	1-4,6, 12-19, 24-27, 29, 36-42, 49,50, 52,53, 56,57, 60-62

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/15419

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Section Ch, Week 199941 Derwent Publications Ltd., London, GB; Class A89, AN 1999-483204 XP002184054 & JP 11 202740 A (FUJITSU LTD), 30 July 1999 (1999-07-30) abstract -----</p>	<p>1,2,12, 14-16, 24,25,36</p>

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 01/15419

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 9926112	A	27-05-1999	EP 1029258 A1 WO 9926112 A1	23-08-2000 27-05-1999
US 5702846	A	30-12-1997	JP 8160842 A	21-06-1996
WO 0041650	A	20-07-2000	AU 6426799 A EP 1139921 A1 WO 0041650 A1	01-08-2000 10-10-2001 20-07-2000
JP 8101499	A	16-04-1996	NONE	
JP 8101503	A	16-04-1996	NONE	
JP 8101502	A	16-04-1996	NONE	
JP 11202740	A	30-07-1999	NONE	