(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 450 408 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
05.05.2010 Bulletin 2010/18

(43) Date of publication A2:
25.08.2004 Bulletin 2004/35

(21) Application number: **03447032.8**

(22) Date of filing: **21.02.2003**

(51) Int Cl.:
H01L 27/00 *(2006.01)*

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT SE SI SK TR
Designated Extension States:
AL LT LV MK RO

(30) Priority: **20.02.2003 US 369882**

(71) Applicant: **BARCO N.V.**
8500 Kortrijk (BE)

(72) Inventors:
- **Dedene, Nele**
  3530 Houthalen-Helchteren (BE)
- **Thielemans, Robbie**
  9810 Nazareth (BE)
- **Van Hille, Herbert**
  Cambridge, MA 02138 (US)

(74) Representative: **Bird, William Edward et al**
Bird Goën & Co.
Klein Dalenstraat 42A
3020 Winksele (BE)

(54) **Display element array for emissive fixed format display**

(57) The present invention provides a multicolor OLED pixel structure (20) having a plurality of light emitting color elements (24-28), each color element emitting light of a particular color. Optical centers (22) of the color elements coincide substantially at an optical center for the pixel structure and any portion of a color element of the pixel structure has an equally luminous portion of the same color element located diametrically opposite thereto with respect to the optical center of the pixel structure. Light from all the color elements adds to be able to form emitted white light.

A plurality of pixel structures may be formed into an array for an active or passive display.

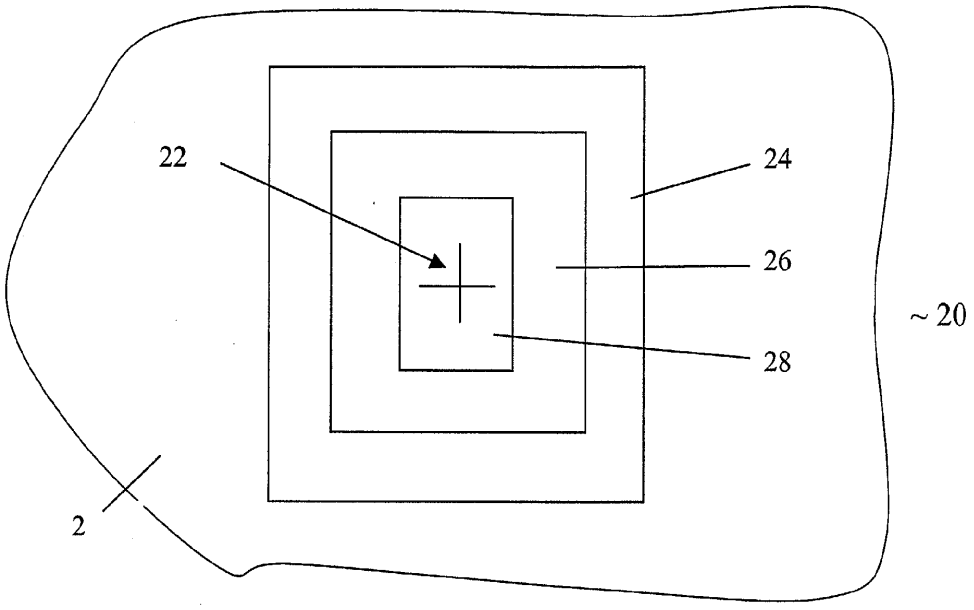

Fig. 7

EP 1 450 408 A3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 03 44 7032

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2002/015110 A1 (BROWN ELLIOTT CANDICE HELLEN [US]) 7 February 2002 (2002-02-07)	1-5, 7-17,22, 24	INV. H01L27/00
Y	* paragraphs [0040], [0042], [0043], [0044], [0057], [0062]; figures 3,8,10 *	18-21,23	
X	JP 2002 008857 A (SEIKO EPSON CORP) 11 January 2002 (2002-01-11) * paragraph [0178]; figure 18 *	1-6, 12-14	
X	JP 10 161567 A (MATSUSHITA ELECTRONICS CORP) 19 June 1998 (1998-06-19) * paragraphs [0016], [0021]; figure 1 *	1-5,12	
Y	JP 2002 260845 A (MATSUSHITA ELECTRIC IND CO LTD) 13 September 2002 (2002-09-13) * figures 2,12,13 *	18-20	
Y	JP 11 008070 A (CASIO COMPUTER CO LTD) 12 January 1999 (1999-01-12) * abstract; figures 1,2 *	21	
			TECHNICAL FIELDS SEARCHED (IPC)
Y	JP 2002 372928 A (SONY CORP) 26 December 2002 (2002-12-26) * abstract; figure 7 *	23	H01L G09G G02F
A	JP 2001 143868 A (SEIKO EPSON CORP) 25 May 2001 (2001-05-25) * paragraphs [0052], [0057]; figures 6,8 *	1-24	
A	EP 0 261 898 A2 (EMI PLC THORN [GB]) 30 March 1988 (1988-03-30) * columns 2,6; figures 1-7 *	1-24	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 March 2010	Faou, Marylène

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 44 7032

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-03-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002015110 A1	07-02-2002	CN 101320150 A	10-12-2008
		KR 20080106593 A	08-12-2008
		US 2005248262 A1	10-11-2005
		US 7274383 B1	25-09-2007
JP 2002008857 A	11-01-2002	NONE	
JP 10161567 A	19-06-1998	NONE	
JP 2002260845 A	13-09-2002	NONE	
JP 11008070 A	12-01-1999	NONE	
JP 2002372928 A	26-12-2002	EP 1396836 A1	10-03-2004
		WO 02103663 A1	27-12-2002
		SG 127742 A1	29-12-2006
		TW 540021 B	01-07-2003
		US 2003173891 A1	18-09-2003
JP 2001143868 A	25-05-2001	JP 3879961 B2	14-02-2007
EP 0261898 A2	30-03-1988	DE 3785282 D1	13-05-1993
		DE 3785282 T2	21-10-1993
		ES 2039448 T3	01-10-1993
		JP 6064421 B	22-08-1994
		JP 63108394 A	13-05-1988
		US 5124695 A	23-06-1992

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	用于发射固定格式显示的显示元素阵列		
公开(公告)号	EP1450408A3	公开(公告)日	2010-05-05
申请号	EP2003447032	申请日	2003-02-21
[标]申请(专利权)人(译)	巴科公司		
申请(专利权)人(译)	BARCO N.V.		
当前申请(专利权)人(译)	BARCO N.V.		
[标]发明人	DEDENE NELE THIELEMANS ROBBIE VAN HILLE HERBERT		
发明人	DEDENE, NELE THIELEMANS, ROBBIE VAN HILLE, HERBERT		
IPC分类号	H01L27/00 H01J1/62 H01L27/32 H05B33/00		
CPC分类号	H01L27/3218		
优先权	10/369882 2003-02-20 US		
其他公开文献	EP1450408A2		
外部链接	Espacenet		

摘要(译)

本发明提供一种多色OLED像素结构（20），其具有多个发光颜色元件（24-28），每个颜色元件发出特定颜色的光。彩色元件的光学中心（22）基本上在像素结构的光学中心处重合，并且像素结构的彩色元件的任何部分具有相同颜色元件的相同发光部分，该部分相对于光学中心与其径向相对。像素结构。来自所有颜色元素的光增加了能够形成发出的白光。多个像素结构可以形成为用于有源或无源显示器的阵列。

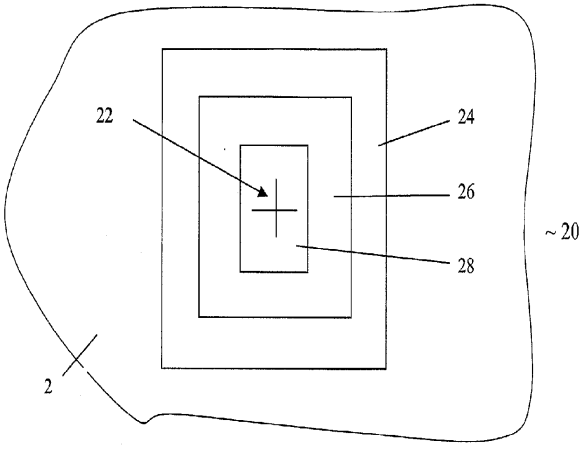

Fig. 7