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(54) **LIQUID CRYSTAL DISPLAY COLOR ADJUSTMENT METHOD AND DEVICE**

(57) The present disclosure relates to a color adjustment method, a color adjustment device and a liquid crystal display. The color adjustment method comprises: obtaining a current color gamut mode of a pixel; transferring the current color gamut mode of the pixel to a preset color gamut mode, so as to obtain a blue component of the pixel in the preset color gamut mode; and performing a weakening regulation on the blue component of the pixel in the preset color gamut mode.

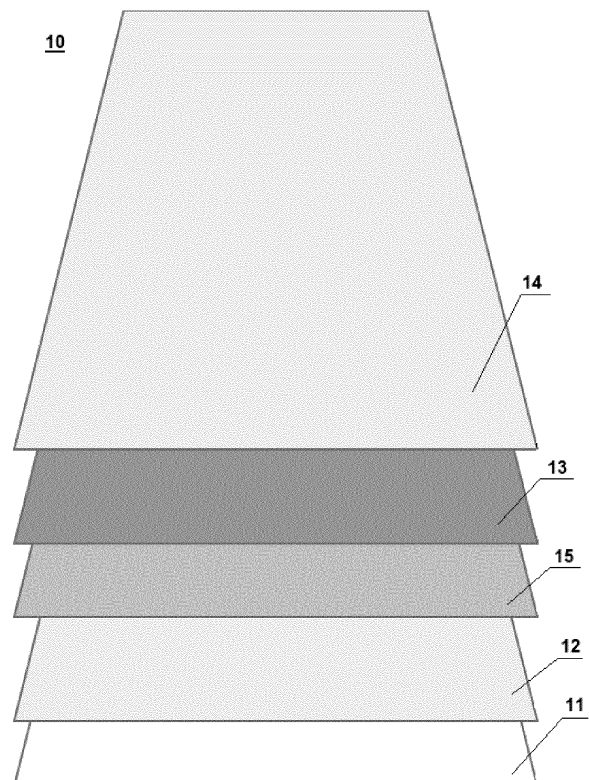


Fig. 1

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EUROPEAN SEARCH REPORT

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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 A	WO 2014/002324 A1 (SHARP KK [JP]) 3 January 2014 (2014-01-03) * paragraph [0011] - paragraph [0086]; figures 1-30c *	1,5,6, 10-12 2-4,7-9	INV. G09G3/20 G02F1/1335
X	US 2010/141859 A1 (PARK HONG-JO [KR] ET AL) 10 June 2010 (2010-06-10) * paragraph [0089] - paragraph [0112]; figures 10-12 *	13,14	
X	US 2011/085111 A1 (SHIBAHARA SEIJI [JP]) 14 April 2011 (2011-04-14) * paragraph [0031] - paragraph [0103]; figures 1-4 *	13,14	
			TECHNICAL FIELDS SEARCHED (IPC)
			G09G G02F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 1 July 2016	Examiner Harke, Michael
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 03/02 (P04C01)



Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION
SHEET B

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-12

A method as defined in claim 1, i. e. a color adjustment method for a liquid crystal display, the method comprising: obtaining a current color gamut mode of a pixel; transferring the current color gamut mode of the pixel to a preset color gamut mode, so as to obtain a blue component of the pixel in the preset color gamut mode; and performing a reduction of the intensity of the blue component of the pixel in the preset color gamut mode, wherein, as claimed in claim 2, transferring the current color gamut mode of the pixel to the preset color gamut mode so as to obtain the blue component of the pixel in the preset color gamut mode comprises: performing a non-linear correction on the blue component of the pixel in the current color gamut mode according to preset formulas, so as to obtain the blue component of the pixel in the preset color gamut mode, in which the preset formulas comprise: if C_{sB} is greater than a first preset value, $C_{sB} = -C_{IB}^{1/x}$; and if C_{sB} is less than or equal to the first preset value, $C_{sB} = B/C_{IB}$; where, C_{IB} is the blue component of the pixel in the current color gamut mode, $0 \leq C_{IB} \leq 1$; C_{sB} is the blue component of the pixel in the preset color gamut mode, $0 \leq C_{sB} \leq 1$; a is a first preset non-linear correction weight, b is a second preset non-linear correction weight; x is a first gamma value of the non-linear correction.

2. claims: 13, 14

A device as claimed in claim 13, i. e. a liquid crystal display, comprising: a down polarizer on a backlight source; an optical filter on the down polarizer, configured to filter out ultraviolet radiation, or to filter out blue components of pixels, or to filter out the ultraviolet radiation and the blue components of the pixels; a liquid crystal layer on the optical filter; and an up polarizer on the liquid crystal layer.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 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
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01-07-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014002324 A1	03-01-2014	CN 104380370 A	25-02-2015
		JP 2015527601 A	17-09-2015
		US 2014002481 A1	02-01-2014
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		JP 2011059363 A	24-03-2011
		US 2011085111 A1	14-04-2011

专利名称(译)	液晶显示器颜色调整方法和装置		
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申请号	EP2015203128	申请日	2015-12-30
[标]申请(专利权)人(译)	小米科技有限责任公司		
申请(专利权)人(译)	小蜜INC.		
当前申请(专利权)人(译)	小蜜INC.		
[标]发明人	LIU ANYU JI CHUANSHUN LI GUOSHENG		
发明人	LIU, ANYU JI, CHUANSHUN LI, GUOSHENG		
IPC分类号	G09G3/20 G02F1/1335		
CPC分类号	G02F1/133514 G02F1/133528 G09G3/3607 G02F1/133509 G02F2001/133567 G02F2201/086 G09G3/2003 G09G2320/0276 G09G2320/0666 G09G2340/06 G02F1/133 H04N9/68 G02B5/208 G09G2320/0673		
审查员(译)	HARKE , 米迦勒		
优先权	201510004915.4 2015-01-05 CN 201510017054.3 2015-01-13 CN		
其他公开文献	EP3040966A2		
外部链接	Espacenet		

摘要(译)

本公开涉及颜色调整方法，颜色调整装置和液晶显示器。色彩调整方法包括：获取像素的当前色域模式；将所述像素的当前色域模式转换为预设的色域模式，以获得预设色域模式下的像素的蓝色分量；并且在预设色域模式下对像素的蓝色分量执行弱化调节。

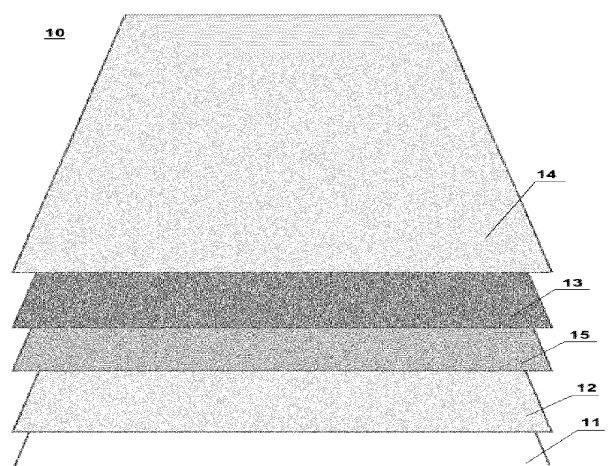


Fig. 1