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(54) ARRAY SUBSTRATE AND COLOUR FILM SUBSTRATE OF DISPLAY DEVICE AND PREPARATION METHOD THEREOF

(57) An array substrate (200) of a display device can effectively suppress the interference to liquid crystal modulation by the signals on a data line (1) and improve the transmittance of light rays. The array substrate includes a pixel region defined by the crossing of a gate line and the data line (1). The pixel region is provided therein with a thin film transistor, a pixel electrode (3), and a common electrode (2) cooperating with the pixel electrode (3) to form a multidimensional electric field. The pixel electrode (3) is a slit-shaped electrode and the common electrode (2) is a plate-shaped electrode, or, the pixel electrode (3) is a plate-shaped electrode and the common electrode (2) is a slit-shaped electrode. A first insulation layer (5) is provided between the common electrode (2) and the pixel electrode (3). One end of the plate-shaped electrode is covered above the data line (1), and a second insulation layer (6) is provided between the layer where the plate-shaped electrode is located and the layer where the data line (1) is located. Also included is a preparation method for an array substrate (200) of a display device.

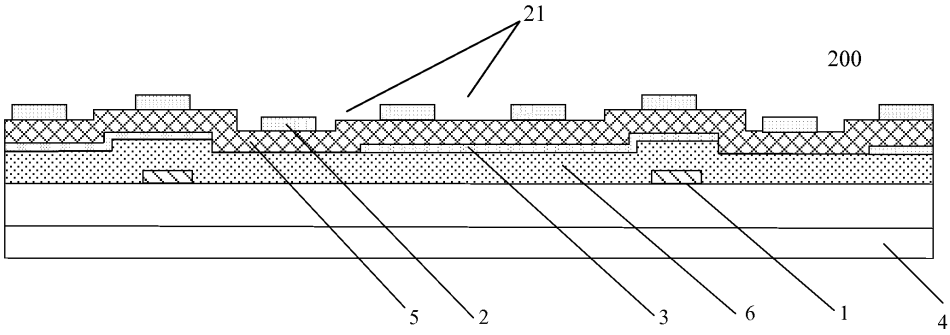

FIG 2

EP 2 775 345 A1

Description

TECHNICAL FIELD

[0001] Embodiments of present invention relate to an array substrate and a color filter substrate of a liquid crystal display (LCD) and a method for manufacturing the same.

BACKGROUND

[0002] In flat panel display technology, LCDs have the advantages such as small volume, low power consumption, little radiation, lower costs, etc., and therefore have prevailed in the current flat panel display market.

[0003] In an Advanced-Super Dimensional Switching (ADS) technology, a multi-dimensional electric field is formed with both an electric field produced at edges of slit electrodes on the same plane and an electric field produced between a pixel electrode layer and a common electrode layer, so that liquid crystal molecules at all orientations, which are located directly above the electrodes and between the slit electrodes in a liquid crystal cell, can be rotated and aligned, which enhances the work efficiency of planar-oriented liquid crystals and increases light transmittance. The Advanced-Super Dimensional Switching technology can improve the picture quality of TFT-LCDs and has advantages such as high transmissivity, wide viewing angles, high opening ratio, low chromatic aberration, low response time, no push Mura, etc.

[0004] In the existing ADS mode LCDs, common electrodes and pixel electrodes are made of a transparent conductor so as to increase aperture ratio and transmittance. The space between the common electrodes and the pixel electrodes is narrower than the space between an upper substrate and a lower substrate, so the multi-dimension electric field formed between the common electrodes and the pixel electrodes make liquid crystal molecules rotated in a plane direction paralleling to substrates, and thus the transmission efficiency is improved.

[0005] In order to prevent light blocking regions above data lines from reducing the aperture ratio and improve transmittance, as shown in FIG.1, the prior art provides a pixel structure in which the light blocking region above the data line 1 is removed and the slit-shaped common electrode 2 is disposed in parallel with the data line 1. A portion of the slit-shaped common electrode 2 is disposed above the pixel electrode 3, and the other portion of the slit-shaped common electrode 2 covers the data line 1 and has a width larger than that of the data line 1. Since the common electrode 2 is formed above the data line 1, the interference with the electric field for liquid crystal can be restrained, disadvantageous effects such as light leakage and the like are prevented, and the transmittance of pixels are improved.

[0006] However, the inventors have noted that: in the above pixel structure, the wide common electrode above the data line still causes transmittance loss at the location of the data line.

SUMMARY OF THE INVENTION

[0007] One of the problems to be solved by the present invention is to provide an array substrate and a color filter substrate of a display device and a method for manufacturing the same, for effectively restraining signals over data lines from interfering with modulation by liquid crystal thereon and improving light transmittance.

[0008] An aspect of the present invention provides an array substrate comprising: a base substrate, a gate line disposed on the base substrate, a data line disposed perpendicular to the gate line, and a pixel region defined by the gate line intersecting the data line, in which a thin film transistor, a pixel electrode, and a common electrode which cooperates with the pixel electrodes to form a multi-dimension electric field are disposed, wherein the pixel electrode is a slit-shaped electrode and the common electrode is a plate-shaped electrode, or the pixel electrode is a plate-shaped electrode and the common electrode is a slit-shaped electrode, and a first insulating layer is disposed between the common electrode and the pixel electrode, and wherein an end of the plate-shaped electrode covers the data line, and a second insulating layer is disposed between a layer of the plate-shaped electrode and a layer of the data line.

[0009] For example, the second insulating layer is a resin layer.

[0010] For example, the slit-shaped electrode comprises slits arranged in a constant interval.

[0011] Another aspect of the present invention provides a method for manufacturing an array substrate, comprising:

forming a gate line, a date line, and a thin film transistor on a base substrate, a gate electrode of the thin film transistor being connected to the gate line, and source electrodes being connected to the data line;

forming a second insulating layer on the base substrate on which the gate line, the data line, and the thin film transistor are formed;

forming a plate-shaped electrode on the base substrate on which the second insulating layer is formed; and

forming a slit-shaped electrode on the base substrate on which the plate-shaped electrode is formed, the slit-shaped electrode cooperating with the plate-shaped electrode to form a multi-dimension electric field, a first insulating layer being disposed between the slit-shaped electrode and the plate-shaped electrode;

wherein the slit-shaped electrode is a pixel electrode and the plate-shaped electrode is a common electrode, or the plate-shaped electrode is a pixel electrode and the slit-shaped electrode is a common electrode, and an end of the plate-shaped electrode covers the data line.

[0012] For example, the second insulating layer is a resin layer.

[0013] For example, the slit-shaped electrode comprises slits arranged in a constant interval.

[0014] Another aspect of the present invention provides a color filter substrate comprising: a base substrate, black matrixes and color resin formed between the black matrixes, on the base substrate, the black matrixes are disposed corresponding to the gate lines, the thin film transistors, and regions where the data lines are not formed and between adjacent pixels, of the array substrate.

[0015] Another aspect of the present invention provides a display device comprising the above array substrate.

[0016] In the technical solutions of embodiments of the present invention, an end of the plate-shaped electrode is located above and covers the data line, and a second insulating layer is disposed between a layer of the plate-shaped electrode and a layer of the data line for insulation and protection. The solutions of the present embodiments not only restrain the interference by the data lines with the modulation conducted by the liquid crystal thereon, but also increase the area of the multi-dimension electric field, increase the modulation range of the liquid crystal in pixels, and improve transmittance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] In order to clearly illustrate the technical solution of the embodiments of the invention, the drawings of the embodiments will be briefly described in the following; it is obvious that the described drawings are only related to some embodiments of the invention and thus are not limitative of the invention.

Fig. 1 is a schematic cross-sectional view of an array substrate in prior art;
Fig.2 is a schematic cross-sectional view of an array substrate in an embodiment of the present invention; and
Fig.3 is a schematic cross-sectional view of a liquid crystal panel in an embodiment of the present invention.

Reference Number

1-data line;	2-common electrode;	3-pixel electrode;
4-base substrate;	5-first insulating layer;	6-second insulating layer;
7-base substrate;	8-black matrix;	9-color resin sheet;
10-liquid crystal layer;	21-slit;	100-color filter substrate;
200-array substrate.		

DESCRIPTION OF THE EMBODIMENTS

[0018] In order to make objects, technical details and advantages of the embodiments of the invention apparent, the technical solutions of the embodiment will be described in a clearly and fully understandable way in connection with the drawings related to the embodiments of the invention. It is obvious that the described embodiments are just a part but not all of the embodiments of the invention. Based on the described embodiments herein, those skilled in the art can obtain other embodiment(s), without any inventive work, which should be within the scope of the invention.

[0019] Embodiments of the present invention provide an array substrate and a color filter substrate of a display device, and a method for manufacturing the same, for effectively restraining the interference by signals over data lines with the modulation conducted by liquid crystal thereon and improving light transmittance.

[0020] The array substrate of the embodiment of the present invention includes a plurality of gate lines and a plurality of data lines which intersect each other to define pixel regions arranged in a matrix, each pixel region comprising a thin film transistor as a switch element, and a pixel electrode and a common electrode for controlling orientation of liquid crystal. A gate electrode of the thin film transistor in each pixel is electrically connected to or integrally formed with a corresponding gate line, a source electrode thereof is connected to or integrally formed with a corresponding data line, and a drain electrode thereof is connected to or integrally formed with a corresponding pixel electrode. The following description is mainly connected with one or more pixel regions, but other pixel regions can be formed similarly.

First Embodiment

[0021] The first embodiment of the present invention provides an array substrate, as shown in FIG.2. The array

substrate 100 includes a base substrate 4, gate lines (not shown in drawings) disposed on the base substrate 4, and data lines 1 perpendicular to the gate lines. The gate lines intersect the data lines 1 to define a plurality of pixel regions. A thin film transistor (not shown), a pixel electrode 3, and a common electrode 2 for cooperating with the pixel electrode 3 to generate a multi-dimension electric field are disposed in each pixel region. In the embodiment, the pixel electrode 3 is a plate-shaped electrode without slits, and the common electrode 2 is a slit-shaped electrode in which a plurality of slits 21 are formed. A first insulating layer 5 is disposed between the common electrode 2 and the pixel electrode 3. An end of the plate-shaped pixel electrode 3 is located above and covers the data line 1, and a second insulating layer 6 is disposed between a layer of the pixel electrode 3 and a layer of the data line 1.

[0022] In a conventional pixel structure, the pixel electrode does not overlap the data line. Because, in an overlapping design in which the pixel electrode overlaps the data line, the data line interferes with the pixel electrode to a large extent. Thus, if the overlapping design is adopted, to avoid the interference of the data line with the pixel electrode, an insulating layer of resin material is generally used, that is, a resin layer is disposed between a layer of the pixel electrode 3 and a layer of the data line 1 so as to isolate them from each other.

[0023] Since the common electrode entirely covers the data line so that the common electrode occupies a wide area over the data line in the prior art scheme as shown in FIG.1, this structure causes transmittance loss at the location of the data line. In contrast, in the array substrate of the present embodiment, an end of the pixel electrode is located above and covers the data line (the common electrode is also above the data line), and an insulating layer is disposed between the layer of the pixel electrode and the layer of the data line for insulation and protection. In this way, the interference by the data lines with the modulation by the liquid crystal thereon is restrained, the area of the multi-dimension electric field is also increased, the modulation range of the liquid crystal in pixels is increased, and transmittance is further improved.

[0024] Further, the second insulating layer 6 is, for example, a resin layer, formed to prevent the data line from interfering with the pixel electrode, that is, a resin layer is disposed between the layer of the pixel electrode 3 and the layer of the data line 1. For example, the common electrodes 2 are arranged in a constant interval, and within pixels, the slit-shaped or plate-shaped common electrode has an arrangement of a constant interval. It should be noted that: since the pixel electrode covers the data line, the loads over the data line will not be affected no matter whether the common electrode overlaps the data line or not. The effect by the loads over the data line is mainly resulted from a capacitor formed between the data line and the pixel electrode, which can be alleviated by a thicker resin material layer as the insulating layer. In the solution of the present invention, a multi-dimension electric field is formed by the plate-shaped pixel electrode at a lower side and the slit-shaped common electrode at the upper side, and the upper common electrode is isolated from the lower pixel electrode by the insulating layer, that is, the first insulating layer; an end of the pixel electrode covers the data line, and a resin layer, i.e., the second insulating layer is disposed between the layer of the pixel electrode and the layer of the data line, for insulation and protection. The solution of the present embodiment not only restrains the data lines from interfering with the modulation by the liquid crystal thereon, but also increases the area of the multi-dimension electric field, increases the modulation range of the liquid crystal within pixels, and further improves transmittance.

Second Embodiment

[0025] The second embodiment is different from the first embodiment in that: the common electrode is a plate-shaped electrode, and the pixel electrode is a slit-shaped electrode; an end of the plate-shaped common electrode is located above and covers the data line, and the second insulating layer is disposed between the common electrode and the data line; the slit-shaped pixel electrode is formed on the common electrode, and the first insulating layer is disposed between the pixel electrode and the common electrode.

[0026] Therefore, in the array substrate of the present embodiment, an end of the common electrode is located above and covers the data line (the pixel electrode is also above the data line), and an insulating layer is disposed between the common electrode and the data line for insulation and protection. In this way, the interference by the data lines with the modulation by the liquid crystal thereon is restrained, the area of the multi-dimension electric field is increased, the modulation range of the liquid crystal in pixels is also increased, and transmittance is further improved.

Third Embodiment

[0027] The embodiment of the present invention also provides a liquid crystal panel. As shown in FIG.3, a liquid crystal panel according to an example of the embodiment includes a color filter substrate 100, the array substrate 200 of the first embodiment, and a liquid crystal layer 10 between the array substrate 200 and the color filter substrate 100.

[0028] The color filter substrate 100 includes: a base substrate 7, black matrixes 8 formed on the base substrate 7, and color resin sheets 9 formed between the black matrixes 8, the black matrixes 8 are disposed at positions corresponding to gate lines, thin film transistors, and a region without data lines and between adjacent pixels on the array substrate 200. The black matrixes 8 of the color filter substrate define a plurality of sub-pixel regions, each sub-pixel region includes

a color resin sheet 9 such as a red, green, and blue resin sheet, and therefore red, green, and blue (RGB) sub-pixels are formed. The sub-pixel regions of the color filter substrate 100 correspond to the sub-pixel regions of the array substrate 200.

[0029] The array substrate 200 is disposed to face the color filter substrate so as to form a liquid crystal cell together. The liquid crystal cell is filled with liquid crystal material to form a liquid crystal layer 10. Thus, a liquid crystal panel is obtained. The pixel electrode and the common electrode of each pixel region apply an electric field to the liquid crystal material to control the degree of rotation of the liquid crystal, thereby performing displaying operation. In some examples, the liquid crystal display further includes a backlight source for supplying light to the liquid crystal panel.

[0030] In the array substrate as shown in FIG.1, the common electrode in a wider structure is disposed above the data line 1, thus the region covered by the common electrode does not transmit light. However, in the array substrate 200 of the present embodiment, since the pixel electrode 3 is disposed above and covers the data line 1, only the region that is immediately above the data line 1 does not transmit light. In this way, the interference by signals of the data line 1 with the electric field for liquid crystal can be eliminated, and the range of liquid crystal modulation is increased. Meanwhile, since the liquid crystal corresponding to the portion of the pixel electrode 3 that is overlapped with the data line 1 can be driven normally, it is unnecessary to dispose black matrixes 8 on the color filter substrate at positions corresponding to the data lines 1. In this case, the black matrixes 8 are only disposed between adjacent pixels, so the area of the black matrixes 8 is reduced, the modulation range of liquid crystal is increased, and transmittance is improved.

[0031] A liquid crystal panel according to another example of the present embodiment includes a color filter substrate, the array substrate of the second embodiment, and a liquid crystal layer between the color filter substrate and the array substrate.

Fourth Embodiment

[0032] The present embodiment of the present invention provides a method for manufacturing the array substrate as described above. The method comprises the following steps:

Step 101, forming a gate line, a data line, a thin film transistor on a base substrate, a gate electrode of the thin film transistor being connected to the gate line and a source electrode being connected to the data line;
Step 102, forming a second insulating layer on the base substrate on which the gate line, the data line, and the thin film transistor are formed;
Step 103, forming a plate-shaped electrode on the base substrate on which the second insulating layer is formed; and
Step 104, forming a slit-shaped electrode on the base substrate on which the plate-shaped electrode is formed, the slit-shaped electrode cooperating with the plate-shaped electrode to form a multi-dimension electric field, wherein a first insulating layer is disposed between the slit-shaped electrode and the plate-shaped electrode.

[0033] The slit-shaped electrode is a pixel electrode, and the plate-shaped electrode is a common electrode; or the plate-shaped electrode is a pixel electrode, and the slit-shaped electrode is a common electrode. An end of the plate-shaped electrode covers the data line.

[0034] For example, the slit-shaped electrode comprises slits arranged in a constant interval.

[0035] The embodiment of the present invention further provides a method for manufacturing a color filter substrate. The method comprises the following step:

Step 201, forming black matrixes and color resin sheets on a base substrate, the black matrixes are disposed corresponding to the gate lines, the thin film transistors, and regions where the data lines are not formed and between adjacent pixels, of the array substrate.

[0036] It should be noted that, in the embodiment of the present invention, the method for manufacturing the above described color filter substrate has various examples, e.g., by first forming the color resin sheets and then forming the black matrixes, or first forming the black matrixes and then forming the color resin sheets. The present embodiment is not limited thereto.

[0037] The black matrixes of the color filter substrate define a plurality of sub-pixel regions, and each sub-pixel region includes a color resin sheet such as a red, green, and blue resin sheet, and thereby obtaining red, green, and blue (RGB) sub-pixels, respectively. The sub-pixel regions of the color filter substrate correspond to the sub-pixel regions of the array substrate.

[0038] The array substrate is disposed to face the color filter substrate so as to form a liquid crystal cell together. The liquid crystal cell is filled with liquid crystal material, so as to obtain a liquid crystal panel. In some examples, the liquid crystal display further includes a backlight source for supplying light to the liquid crystal panel.

[0039] Various modifications can be made for the embodiments of the present invention; for example, the plate-shaped

electrodes may be common electrodes and the slit-shaped electrodes may be pixel electrodes, as long as a multi-dimension field is formed therebetween. Further, alternatively, the electrodes covering the data lines may not be formed after the gate lines, the gate electrodes and the thin film transistors are formed, and for example, the gate lines and the gate electrodes are formed finally in a top-gate thin film transistor, as long as the thin film transistors can be driven normally, the data lines are protected by an insulating material, and the multi-dimension electric field can be formed.

[0040] An embodiment of the present invention further provides a display device, such as, liquid crystal display, liquid crystal TV, electronic paper, digital photo frame, etc., which comprises any one of the array substrates described in the above embodiments. When the display device is for example a liquid crystal display, it includes a liquid crystal panel including an array substrate, a color filter substrate, and a liquid crystal layer between the array substrate and the color filter substrate.

[0041] It should be noted that the above description is only for the purpose of explaining the solution of the invention but not for a limitation, although the invention has been described in detail with reference to the preferred embodiments, those skilled in the art should understand that change and alternation can be made in the solutions of the invention without depart from the spirit and scope of the invention.

Claims

1. An array substrate, comprising:

a base substrate,
a gate line disposed on the base substrate,
a data line disposed perpendicular to the gate line, and
a pixel region defined by the gate line intersecting the data line, in which a thin film transistor, a pixel electrode, and a common electrode which cooperates with the pixel electrodes to form a multi-dimension electric field are disposed,
wherein the pixel electrode is a slit-shaped electrode and the common electrode is a plate-shaped electrode, or the pixel electrode is a plate-shaped electrode and the common electrode is a slit-shaped electrode, and a first insulating layer is disposed between the common electrode and the pixel electrode, and
wherein an end of the plate-shaped electrode covers the data line, and a second insulating layer is disposed between a layer of the plate-shaped electrode and a layer of the data line.

2. The array substrate according to claim 1, wherein the second insulating layer is a resin layer.

3. The array substrate according to claim 1 or 2, wherein the slit-shaped electrode comprises slits arranged in a constant interval.

4. A method for manufacturing an array substrate, comprising:

forming a gate line, a date line, and a thin film transistor on a base substrate, a gate electrode of the thin film transistor being connected to the gate line, and source electrodes being connected to the data line;
forming a second insulating layer on the base substrate on which the gate line, the data line, and the thin film transistor are formed;
forming a plate-shaped electrode on the base substrate on which the second insulating layer is formed; and
forming a slit-shaped electrode on the base substrate on which the plate-shaped electrode is formed, the slit-shaped electrode cooperating with the plate-shaped electrode to form a multi-dimension electric field, a first insulating layer being disposed between the slit-shaped electrode and the plate-shaped electrode;
wherein the slit-shaped electrode is a pixel electrode and the plate-shaped electrode is a common electrode, or the plate-shaped electrode is a pixel electrode and the slit-shaped electrode is a common electrode, and an end of the plate-shaped electrode covers the data line.

5. The method according to claim 4, wherein the second insulating layer is a resin layer.

6. The array substrate according to claim 4 or 5, wherein the slit-shaped electrode comprises slits arranged in a constant interval.

7. A display device, comprising the array substrate of any one of claims 1-3.

8. The display device of claim 7, wherein the display device is a liquid crystal display, and further comprises a color filter substrate.

9. The display device of claim 8, wherein the color filter substrate comprises black matrixes and color resin sheet formed between the black matrixes, on the base substrate, the black matrixes are disposed corresponding to the gate line, the thin film transistor, and regions where the data line is not formed and between adjacent pixels, of the array substrate.

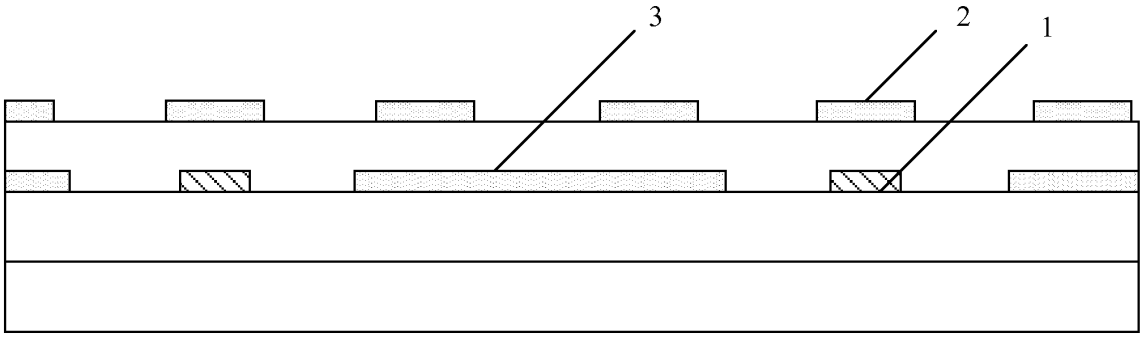

FIG 1

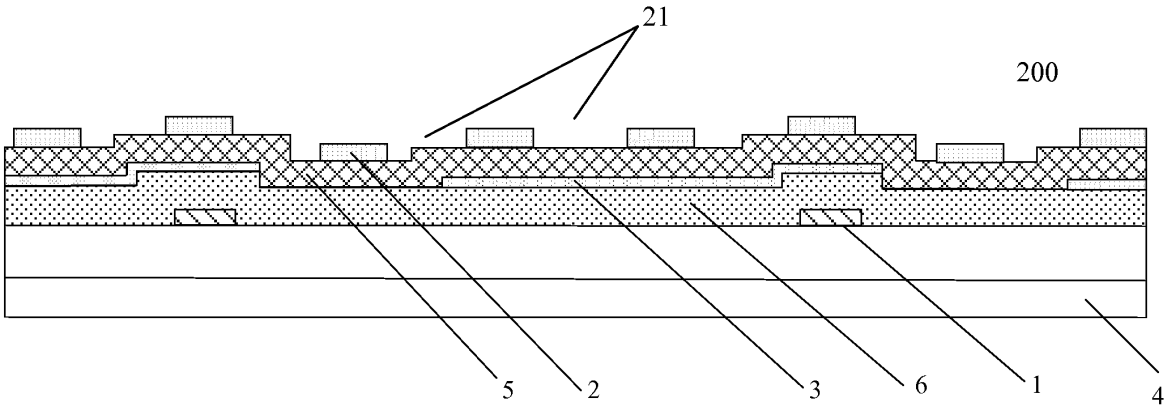

FIG 2

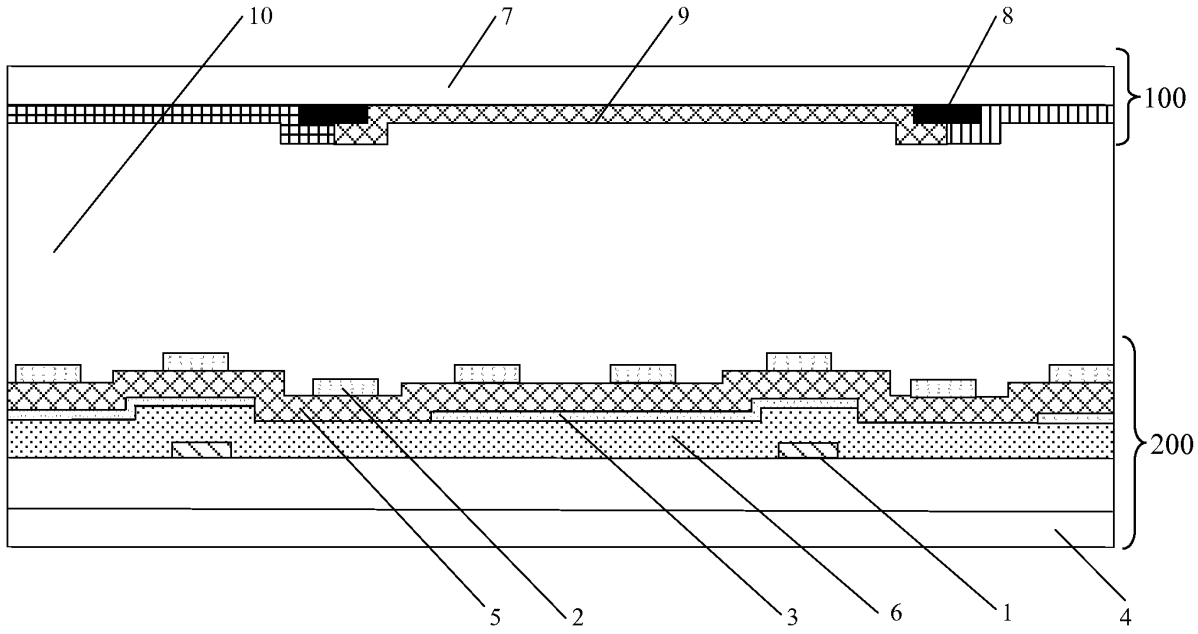

FIG 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2012/082446

A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

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: G02F

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 practicable, search terms used)

CNABS VEN: plate signal line ADS FFS flat panel electrode Pixel common electrode cover data line

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 101424834 A (SONY CORP.), 06 May 2009 (06.05.2009), see description, page 7, line 14 to page 13, line 10, and figures 1-3	1-3, 7, 8
Y		1-9
Y	CN 101078841 A (MITSUBISHI ELECTRIC CORP.), 28 November 2007 (28.11.2007), see description, page 4, line 20 to page 6, line 5	4-6
Y	CN 102033369 A (BEIJING BOE OPTOELECTRONICS TECHNOLOGY CO., LTD.), 27 April 2011 (27.04.2011), see claims 6 and 7	1-9
Y	CN 101174638 A (PRIME VIEW INTERNATIONAL CO., LTD.), 07 May 2008 (07.05.2008), see figure 1	1-9
A	US 2011216278 A1 (MITSUBISHI ELECTRIC CORP.), 08 September 2011 (08.09.2011), the whole document	1-9
PX	CN 102629055 A (BEIJING BOE OPTOELECTRONICS TECHNOLOGY CO., LTD.), 08 August 2012 (08.08.2012), the whole document	1-9

☐ Further documents are listed in the continuation of Box C. ☒ See patent family 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 application or patent 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	Date of mailing of the international search report
28 December 2012 (28.12.2012)	**17 January 2013 (17.01.2013)**
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer **HU, Yang** Telephone No.: (86-10) **62085567**

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2012/082446

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CN 102629055 A	08.08.2012	None	

Form PCT/ISA/210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2012/082446

A. CLASSIFICATION OF SUBJECT MATTER

G02F 1/1343 (2006.01) i

G02F 1/1362 (2006.01) i

Form PCT/ISA/210 (extra sheet) (July 2009)

专利名称(译)	阵列基板和用于显示装置的彩色膜基质及其生产方法		
公开(公告)号	EP2775345A4	公开(公告)日	2015-06-10
申请号	EP2012780626	申请日	2012-09-29
[标]申请(专利权)人(译)	北京京东方光电科技有限公司		
申请(专利权)人(译)	北京京东方光电科技有限公司.LTD.		
当前申请(专利权)人(译)	北京京东方光电科技有限公司.LTD.		
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摘要(译)

显示装置的阵列基板（200）可以有效地抑制数据线（1）上的信号对液晶调制的干扰，并提高光线的透射率。阵列基板包括由栅极线和数据线（1）的交叉限定的像素区域。像素区域中设置有薄膜晶体管，像素电极（3）和与像素电极（3）配合的公共电极（2），以形成多维电场。像素电极（3）是狭缝状电极，公共电极（2）是板状电极，或者像素电极（3）是板状电极，公共电极（2）是狭缝形电极。在公共电极（2）和像素电极（3）之间提供第一绝缘层（5）。板状电极的一端覆盖在数据线（1）上方，第二绝缘层（6）设置在板状电极所在的层与数据线（1）所在的层之间。位于。还包括用于显示装置的阵列基板（200）的制备方法。