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(54) **ORGANIC LIGHT EMITTING DISPLAY DEVICE**

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**H01L 51/50** (2006.01)

(52) **U.S. Cl.** ..... **313/504**; 428/690; 313/512

(58) **Field of Classification Search** ..... 313/504,  
313/509, 512, 495; 428/690  
See application file for complete search history.

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(57) **ABSTRACT**

An organic light emitting display device. The organic light emitting display device includes a first substrate, a second substrate overlapping with at least one region of the first substrate and a sealing agent attached between the first substrate and the second substrate to seal a display unit therebetween. A conductive wire on the first substrate overlapping with at least a portion of the sealing agent includes a first conductive layer and a second conductive layer having at least one region formed at different levels to be electrically coupled to each other through contact holes. The first conductive layer and the second conductive layer are configured to reduce a resistance of the conductive wire and improve an adhesive force of the sealing agent.

**13 Claims, 6 Drawing Sheets**

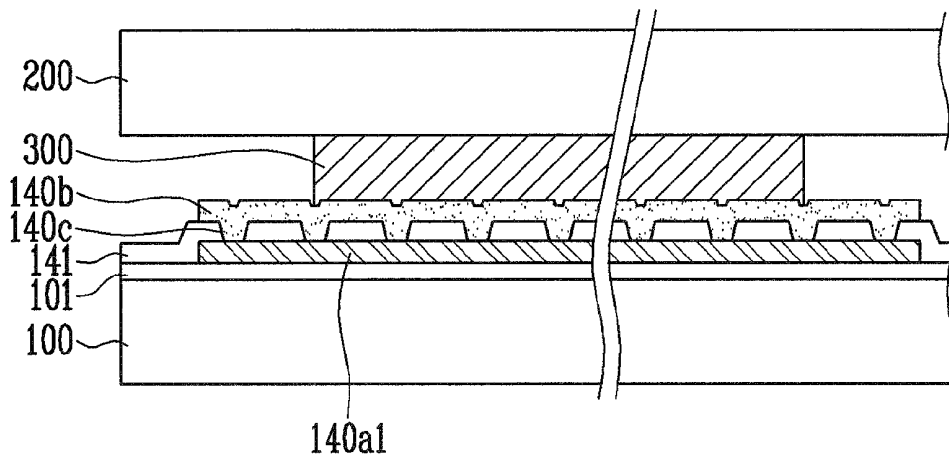


FIG. 1

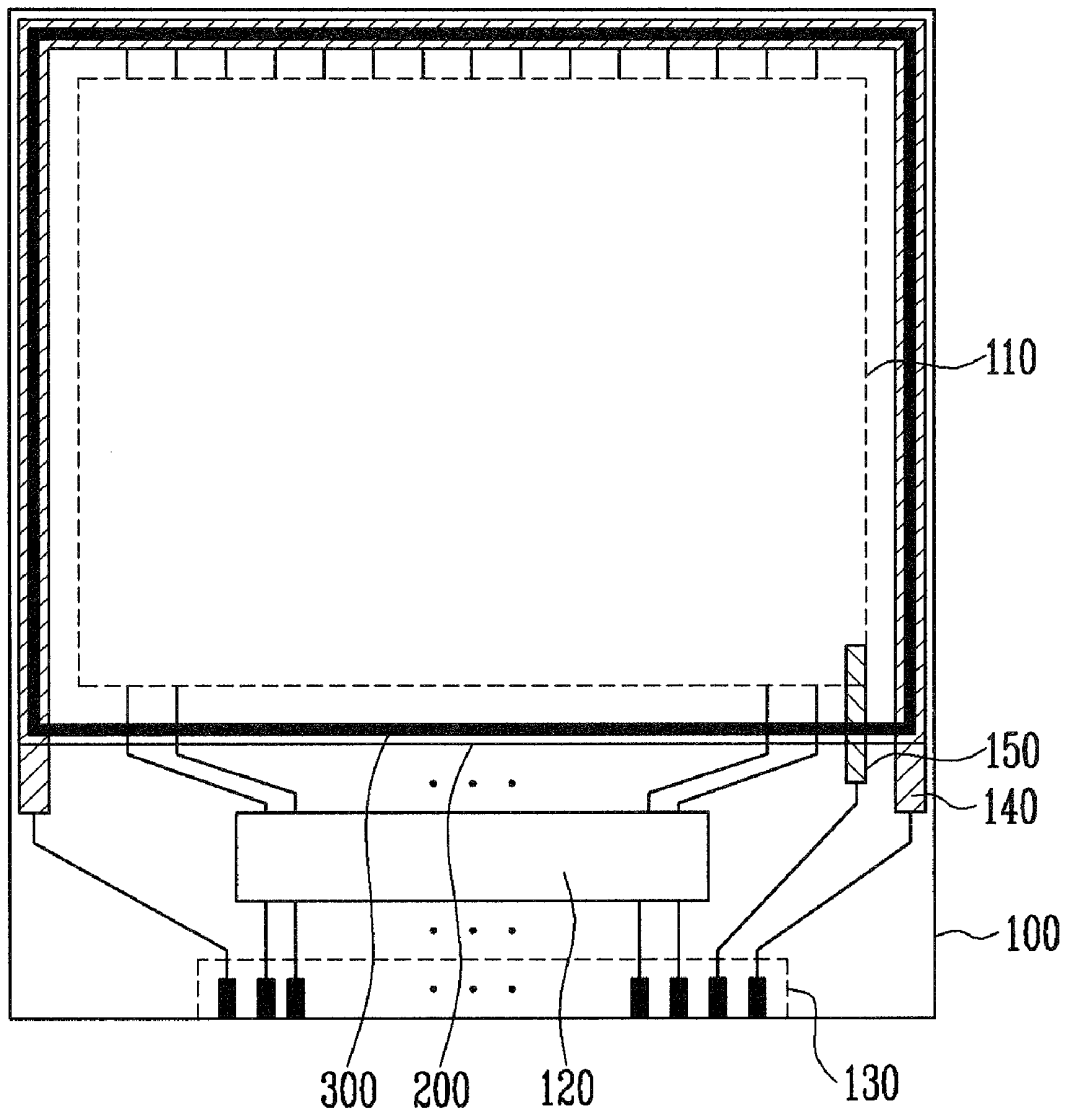


FIG. 2

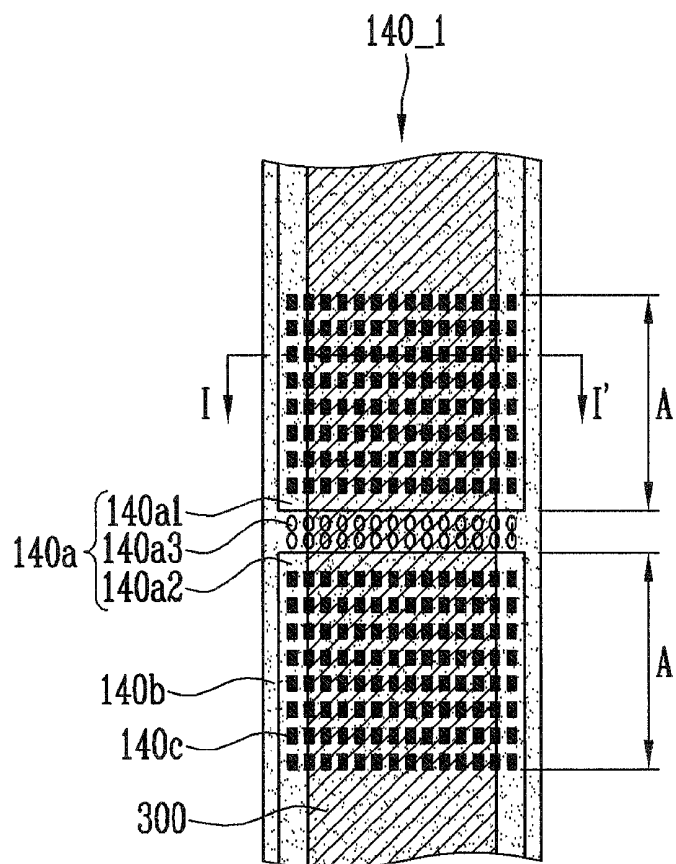
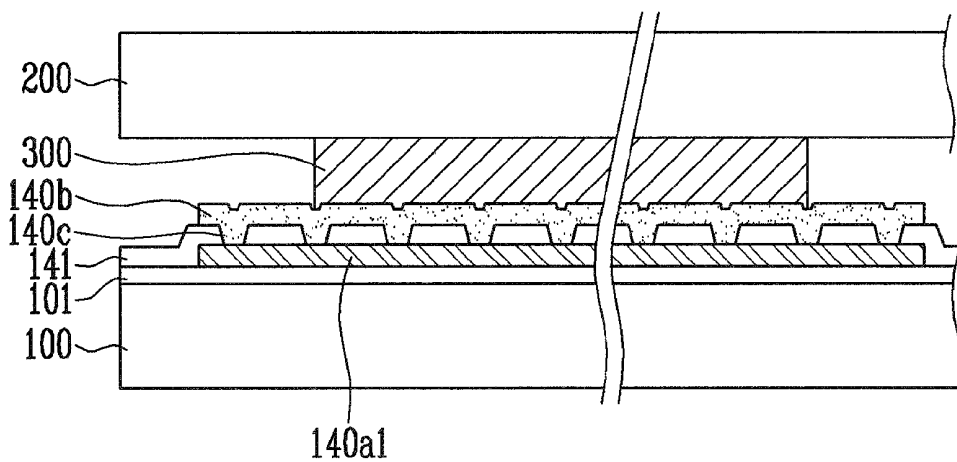


FIG. 3



# FIG. 4

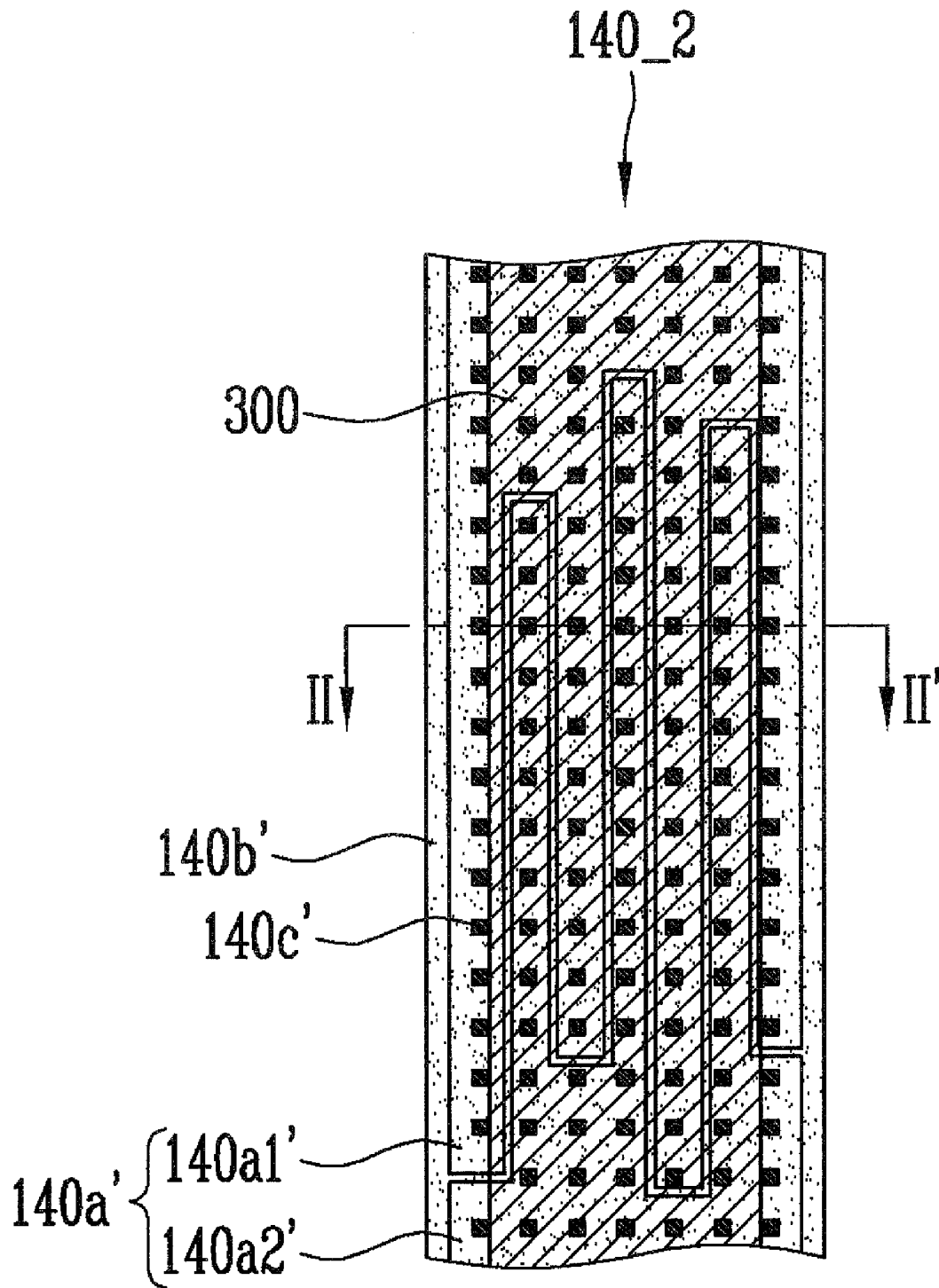


FIG. 5A

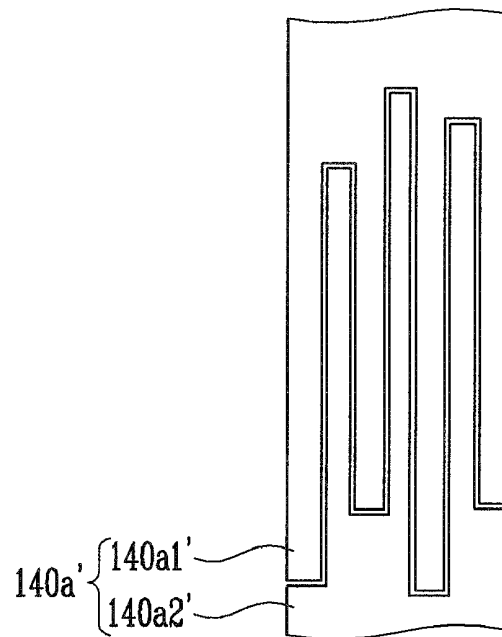


FIG. 5B

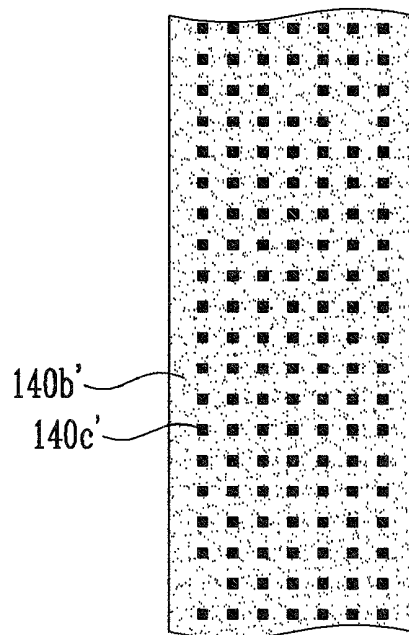


FIG. 6

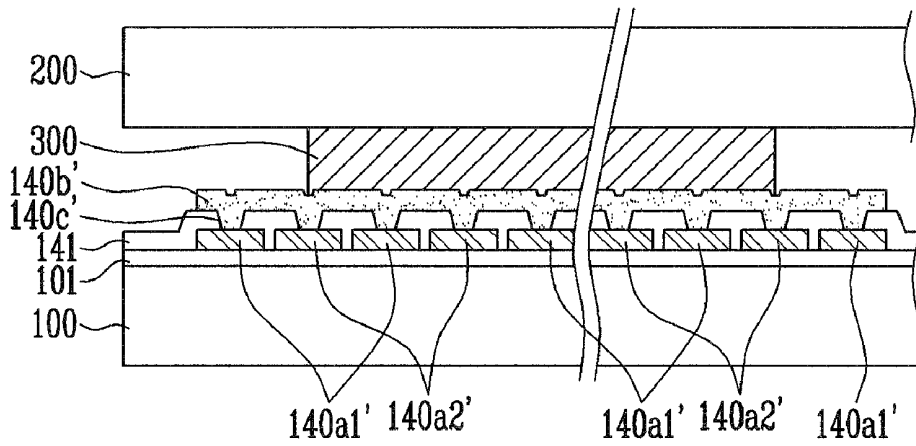


FIG. 7

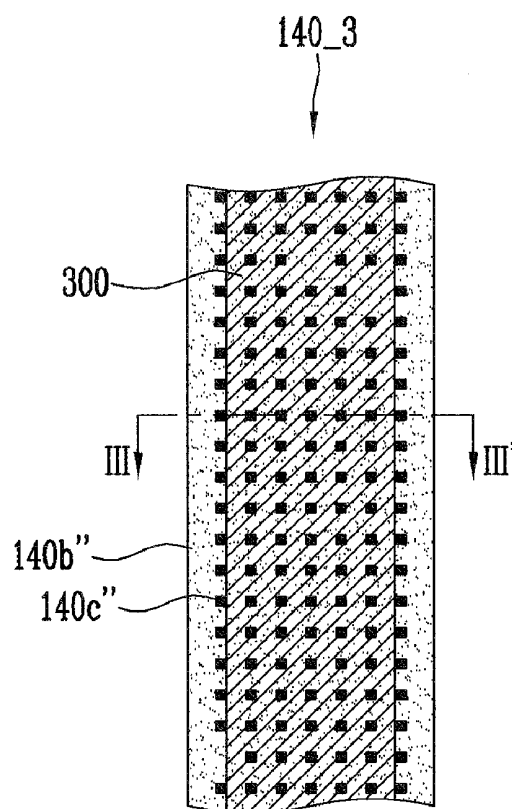
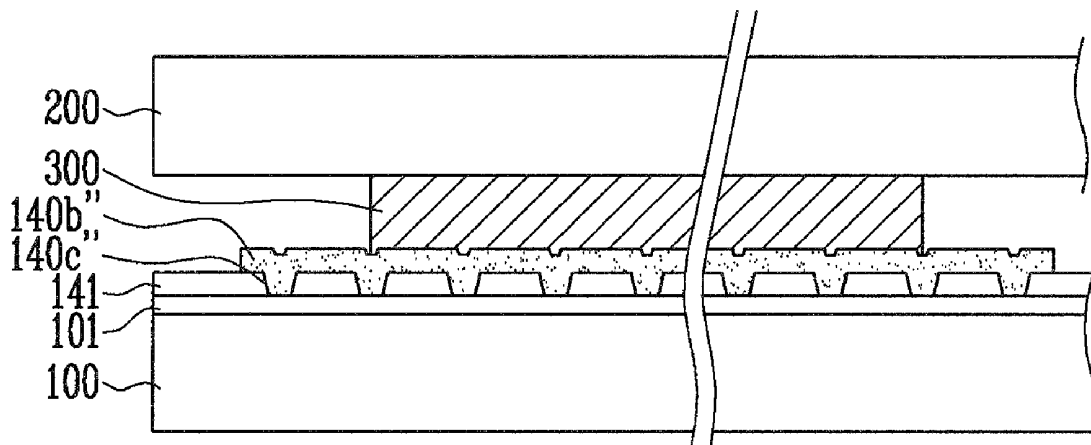


FIG. 8



**ORGANIC LIGHT EMITTING DISPLAY  
DEVICE****CROSS-REFERENCE TO RELATED  
APPLICATION**

This application claims priority to and the benefit of Korean Patent Application No. 10-2008-0018312, filed on Feb. 28, 2008, in the Korean Intellectual Property Office, the entire content of which is incorporated herein by reference.

**BACKGROUND OF THE INVENTION**

## 1. Field of the Invention

The present invention relates to an organic light emitting display device, and more particularly, to a conductive wire and a sealing agent of an organic light emitting display device.

## 2. Description of Related Art

In recent years, there have been developed various flat panel displays that are light-weight and small-sized as compared with cathode ray tubes. Among the flat panel display devices, the organic light emitting display device has excellent luminance and color purity by using an organic compound as a light emitting material.

An organic light emitting display device includes a display unit including a large number of pixels disposed at crossing regions between scan lines and data lines, and a drive circuit for driving the display unit.

Here, each of the pixels includes an organic light emitting diode, each of which includes an anode electrode, a cathode electrode and an organic light emitting layer formed therebetween.

Since the organic light emitting layer deteriorate when exposed to moisture and oxygen, the display unit of the organic light emitting display device is generally sealed with an encapsulation member. That is to say, a display panel of an organic light emitting display device in which the display unit is formed includes a first substrate having the display unit formed thereon and a second substrate attached to the first substrate by a sealing agent for sealing the display unit. Further, a pad unit for receiving power from drive power sources and/or drive signals from an outside source is formed on one side of the first substrate.

In the organic light emitting display device, conductive wires for supplying power from drive power sources and/or drive signals to the display unit are formed between the display unit and the drive circuit, and/or between the display unit and the pad unit.

For example, scan lines and/or data lines for supplying a scan signal and/or a data signal may be formed between the display unit and the drive circuit. Power lines for supplying power from first and second power sources (ELVDD and ELVSS) to the display unit may be formed between the display unit and the pad unit.

However, when the power and/or the drive signals are transmitted through conductive wires, a voltage drop (IR drop) occurs due to the resistance of the conductive wires. Therefore, the characteristics of the organic light emitting display device may be deteriorated, such that non-uniform image quality may result, for example.

For example, when the power sources (ELVDD and ELVSS) supply a DC type power through the conductive wires, a relatively high voltage drop may occur along the conductive wires. Therefore, the pixels may be supplied with various voltages from the power sources (ELVDD and ELVSS), which leads to non-uniform image quality.

In some display panels, at least some of the conductive wires may be disposed to be overlapped with a sealing agent so as to reduce a dead space and the like.

Here, an adhesive force of the sealing agent may be changed according to the characteristics of materials used as the sealing agent and the configuration of the conductive wires disposed at a lower portion of the sealing agent. Therefore, it is desirable to improve reliability of the organic light emitting display device by configuring the conductive wires so as to provide a uniform adhesive force of the sealing agent.

**SUMMARY OF THE INVENTION**

Embodiments of the present invention provide an organic light emitting display device having reduced resistance of a conductive wire and an improved uniform adhesive force of a sealing agent.

According to an embodiment of the present invention, an organic light emitting display device includes a first substrate having a display unit on one surface thereof; a second substrate and overlapping with at least one region of the first substrate including the display unit; a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and a conductive wire on the first substrate overlapping with at least a portion of the sealing agent and including a first conductive layer and a second conductive layer, at least one region of the first conductive layer and at least one region of the second conductive layer formed at different levels and electrically coupled to each other through contact holes. The first conductive layer includes a first region and a second region that are physically disconnected from each other, and an interface between the first region and the second region has a concavo-convex shape.

The interface between the first region and the second region of the first conductive layer may have upper straight sections extending in a first direction and lower straight sections extending in the first direction. The upper straight sections and the lower straight sections respectively form a criss-cross pattern.

Also, the contact holes may be uniformly distributed throughout a region where the first conductive layer and the second conductive layer overlap with each other.

In addition, the first conductive layer may include a gate metal, the second conductive layer may include a source/drain metal, and a gate insulating layer may be between the first conductive layer and the second conductive layer.

Additionally the second conductive layer may include a continuous region, and the first region and the second region of the first conductive layer may be electrically coupled to each other through the second conductive layer and the contact holes.

Also, the conductive wire may include a power line for supplying power of a power source to the display unit.

Furthermore, the contact holes may be uniformly distributed in a lower portion of the second conductive layer.

According to another embodiment of the present invention, an organic light emitting display device includes a first substrate having a display unit on one surface thereof; a second substrate overlapping with at least one region of the first substrate including the display unit; a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and a conductive wire on the first substrate and overlapped with at least a portion of the sealing agent. The conductive wire includes a conductive layer on an insulating film having a plurality of contact holes formed therein.

Here, the plurality of contact holes may be uniformly distributed over a lower portion of the conductive layer.

According to still another embodiment of the present invention, an organic light emitting display device includes a first substrate having a display unit on one surface thereof; a second substrate overlapping with at least one region of the first substrate including the display unit; a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and a conductive wire on the first substrate overlapping with at least a portion of the sealing agent and including a first conductive layer and a second conductive layer, at least one region of the first conductive layer and at least one region of the second conductive layer formed at different levels and electrically coupled to each other through contact holes. The first conductive layer includes a first region and a second region that are physically disconnected from each other at a first end of the first region and a second end of the second region, and the first end and the second end each include protrusion units and receiving units.

As described above, the organic light emitting display device according to the embodiments of the present invention may reduce resistance of a conductive wire by forming a laminated structure of conductive wires that is composed of at least two conductive layers (e.g., first and second conductive layers). Therefore, it may reduce the voltage drop a drive power source and/or a drive signal supplied via the conductive wire. In addition, it may display an image with improved uniform image quality.

Also, the organic light emitting display device according to the embodiments of the present invention may prevent an antenna effect by physically disconnecting one region of the first conductive layer that includes a laminated structure of conductive wires. Also, the organic light emitting display device according to the embodiments of the present invention may provide a sealing agent that has a uniform adhesive force.

Furthermore, the organic light emitting display device according to the embodiments of the present invention may increase an adhesive force of the sealing agent uniformly by forming the contact holes uniformly distributed between the first and second conductive layers, or in a lower portion of the second conductive layer, thereby increasing a surface area of a film formed on the contact holes and a surface area of the sealing agent, and dispersing heat generated in a sealing process.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, together with the specification, illustrate exemplary embodiments of the present invention, and, together with the description, serve to explain the principles of the present invention.

FIG. 1 is a plan view showing an organic light emitting display device according to an exemplary embodiment of the present invention.

FIG. 2 is a plan view showing an example of a first conductive wire shown in FIG. 1.

FIG. 3 is a cross-sectional view taken along the line I-I' in FIG. 2.

FIG. 4 is a plan view showing another embodiment of the first conductive wire shown in FIG. 1.

FIG. 5A is a plan view showing a first conductive layer shown in FIG. 4.

FIG. 5B is a plan view showing contact holes and a second conductive layer shown in FIG. 4.

FIG. 6 is a cross-sectional view taken along the line II-II' in FIG. 4.

FIG. 7 is a plan view showing still another embodiment of the first conductive wire shown in FIG. 1.

FIG. 8 is a cross-sectional view taken along the line III-III' in FIG. 7.

#### DETAILED DESCRIPTION OF EMBODIMENTS

Hereinafter, certain exemplary embodiments according to the present invention will be described with reference to the accompanying drawings. Here, when a first element is described as being coupled to a second element, the first element may be directly coupled to the second element or indirectly coupled to the second element via a third element. Further, some of the elements that are not essential to the complete understanding of the invention are omitted for clarity. Also, like reference numerals refer to like elements throughout.

FIG. 1 is a plan view showing an organic light emitting display device according to an exemplary embodiment of the present invention.

Referring to FIG. 1, the organic light emitting display device according to an exemplary embodiment of the present invention includes a first substrate **100** having a display unit **110**, a drive circuit **120** and a pad unit **130** formed thereon; a second substrate **200** disposed on one region of the first substrate **100**; and a sealing agent **300** attached between the first substrate **100** and the second substrate **200**.

The display unit **110** is formed on one surface of the first substrate **100**, and includes a plurality of pixels (not shown), each of which includes at least one organic light emitting diode. The display unit **110** displays an image corresponding to power from drive power sources and/or drive signals that are supplied from the drive circuit **120** and/or the pad unit **130**.

The drive circuit **120** generates a scan signal and/or a data signal corresponding to the power from the drive power sources and/or the drive signals supplied from the pad unit **130**, and supplies the generated scan signal and/or data signal to the display unit **110**. The drive circuit **120** may include a scan driver and/or a data driver. The drive circuit **120** may be formed together with the display unit **110** in a process of forming the display unit **110**, or may be mounted on the first substrate **100** in the form of an integrated circuit (IC) chip.

The pad unit **130** includes a plurality of pads to receive the power from the drive power sources and/or the drive signals from the outside source, and supply the power from the drive power sources and/or the drive signals to the display unit **110** and/or the drive circuit **120**.

Here, the display unit **110** is disposed inside a sealing region between the first substrate **100** and the second substrate **200** that is sealed to the first substrate **100** by the sealing agent **300**, and the drive circuit **120** and/or the pad unit **130** are disposed outside the sealing region.

The second substrate **200** is disposed on at least one region of the first substrate **100**. Then, the second substrate **200** is sealed with the at least one region of the first substrate **100** using the sealing agent **300** to provide the sealing region that includes the display unit **110** therein.

The sealing agent **300** is applied on edges around a surface of the second substrate **200** facing the first substrate **100** to attach the first substrate **100** and the second substrate **200** to each other. That is, the sealing agent **300** is attached between the first and second substrates **100** and **200** to seal a region between (for example, the region where the display unit **110** is located) the first and second substrates **100** and **200**.

Furthermore, conductive wires to supply the power from the drive power sources and/or the drive signals to the display

unit **110** are formed between the display unit **110** and the drive circuit **120**, and/or between the display unit **110** and the pad unit **130**.

For example, scan lines and/or data lines for supplying a scan signal and/or a data signal may be formed between the display unit **110** and the drive circuit **120**.

Also, first and second conductive wires **140** and **150** for supplying power from first and second power sources (ELVDD and ELVSS) from outside the organic light emitting display device to the display unit **110** may be formed between the display unit **110** and the pad unit **130**.

However, when the first and second power sources (ELVDD and ELVSS) supply a DC type power, a voltage drop (IR drop) may occur along the conductive wires **140** and **150** due to the resistance of the conductive wires **140** and **150**. Therefore, the conductive wires **140** and **150** may be formed relatively wider than the other signal lines.

Thus, in addition to the data signal, the power supplied from the power sources (ELVDD and ELVSS) may directly affect the luminance of the pixels. Therefore, the conductive wires **140** and **150** should be designed to minimize (or reduce) the voltage drop of power supplied from the power sources (ELVDD and ELVSS).

For convenience of description, detail description of the first conductive wire **140** for supplying power from a first power source (ELVDD) will be used as an illustrative example.

The first conductive wire **140** may be formed with a relatively large width, and also is disposed to surround the perimeter (e.g., on three sides) of the display unit **110**.

At least a portion of the first conductive wire **140** is formed in a laminated structure that includes at least two conductive layers that are formed in different layers and are electrically coupled to each other through contact holes. As such, it is possible to minimize or reduce the voltage drop of the first power source (ELVDD) along the first conductive wire **140**.

Also, the first conductive wire **140** may be so disposed such that a portion of the first conductive wire **140** overlaps the sealing agent **300** to minimize or reduce a dead space on the first substrate **100**.

Here, the first and second conductive wires **140** and **150** for supplying the power from the first and second power sources (ELVDD and ELVSS) in the organic light emitting display device are shown FIG. **1**, but the present invention is not particularly limited thereto.

For example, mother wires may be commonly coupled to organic light emitting display devices disposed in the same row and/or column on a mother substrate that has a large number of organic light emitting display devices formed therein. As described above, the mother wires, which supply the power from the power sources (ELVDD and ELVSS) to the organic light emitting display devices coupled to the mother wires, may be so disposed to overlap the sealing agent **300**. That is, embodiments of the present invention may apply to the mother wires.

FIG. **2** is a plan view showing an example of the first conductive wire **140** as shown in FIG. **1**, and FIG. **3** is a cross-sectional view taken along the line I-I' as shown in FIG. **2**. For convenience of description, a substrate and an insulating film are not shown in FIG. **2**.

Referring to FIGS. **2** and **3**, at least one region **140\_1** of the first conductive wire **140** is formed with a laminated structure that includes a first conductive layer **140a** and a second conductive layer **140b**.

In some embodiments, the at least one region **140\_1** of the first conductive wire **140** may be formed in a laminated structure including the first conductive layer **140a** and the second

conductive layer **140b**. Here, the first conductive layer **140a** may be formed on the first substrate **100**, and the second conductive layer **140b** may be formed to overlap the first conductive layer **140a** with an insulating film **141** interposed therebetween.

Here, the first conductive layer **140a** may be formed on a buffer layer and/or a gate insulating film **101** formed on the substrate **100**, and may be formed in the same process of forming a gate electrode of a thin film transistor in the display unit **110**. That is to say, the first conductive layer **140a** may be formed of a gate metal, for example, molybdenum (Mo), etc.

However, when the first conductive layer **140a** is made of the gate metal such as molybdenum (Mo) and is extended for a certain length, it may bring about an antenna effect. Therefore, the first conductive layer **140a** is designed not to be too long and to be discontinuous at least at a portion thereof so as to prevent the antenna effect.

In other words, the first conductive layer **140a** is made of the same conductive material and disposed in the same layer as the gate metal, wherein the at least one region **140\_1** of the first conductive layer **140a** includes first and second regions **140a1** and **140a2** that are physically disconnected to be spaced apart from each other.

Also, a first conductive layer **140a** is disposed at a space between the first and second regions **140a1** and **140a2**, i.e., between the first region **140a1** and the second region **140a2**, the first conductive layer **140a** being patterned into a pattern **140a3** having a predetermined shape. The pattern **140a3** does not supply power and/or a signal, but may relieve a stepped difference of layers that will be formed on the first conductive layer **140a**.

An insulating film **141** such as an interlayer insulating film is formed on the first conductive layer **140a**. A second conductive layer **140b** is formed on the insulating film **141**.

The second conductive layer **140b** may be formed in the same process for forming the source/drain electrode of the thin film transistor in the display unit **110**. That is, the second conductive layer **140b** may be formed with a three-layered structure of a source/drain metal, for example, titanium/aluminum/titanium (Ti/Al/Ti).

Such a second conductive layer **140b** is continuously formed, without physical disconnection in any region of the second conductive layer **140b**, in a region in which the first conductive wire **140** is formed. The second conductive layer **140b** is electrically coupled with the first conductive layer **140a** through the contact holes **140c** that are formed in a border region where the first conductive layer **140a** is physically disconnected (region 'A' in FIG. **2**).

That is, a plurality of contact holes **140c** are formed in the insulating film **141** that is formed between the first conductive layer **140a** and the second conductive layer **140b**, thereby electrically coupling the first conductive layer **140a** to the second conductive layer **140b** via the contact holes **140c**.

According to the above-mentioned configuration, the first and second regions **140a1** and **140a2** of the first conductive layer **140a** maintains the electrical connection through the contact holes **140c** and the second conductive layer **140b**.

As described above, the at least one region **140\_1** of the first conductive wire **140** may be formed in a laminated structure that includes the first conductive layer **140a** and the second conductive layer **140b** and has a relatively large width. Therefore, it is possible to reduce the resistance of the first conductive wire **140**. As a result, it is also possible to minimize or reduce the voltage drop along the first conductive wire **140** when the power of the drive power source and/or the drive signal are supplied through the first conductive wire **140**. For example, when the power of the first power source

(ELVDD) is supplied through the first conductive wire **140**, the variation in luminance between the pixels may be reduced to display an image with uniform image quality.

In designing an organic light emitting display device to reduce a dead space on a substrate, at least some wires such as the first conductive wire **140** in FIG. **1** may be so disposed to overlap the sealing agent **300**. For example, the sealing agent **300** may also be disposed at an inner upper portion of the first conductive wire **140** to completely overlap the first conductive wire **140**. Also, a passivation film (not shown) and the like may be formed between the second conductive layer **140b** and the sealing agent **300**.

However, when the first conductive wire **140** is designed as shown in FIG. **2**, an adhesive force of the sealing agent **300** formed on the first conductive wire **140** may be applied non-uniformly.

That is, in the region where the contact holes **140c** are concentrated, a surface area where a top layer (for example, a second conductive layer **140b**) on the contact hole **140c** that is in contact with the sealing agent **300** may be increased since an upper portion of the region is formed non-uniformly. Therefore, the adhesive force between the top layer on the contact holes **140c** and the sealing agent **300** may be enhanced, but the adhesive force between the other regions may be relatively reduced.

Also in the region where the contact holes **140c** are concentrated, it is possible to reduce the volume expansion of the region by dispersing a heat energy into the first conductive layer **140a**, the heat energy being generated in a step of melting the sealing agent **300** by using a laser. On the contrary, an adhesive force at the region where the contact holes **140c** are concentrated and that at the other regions may be different since the heat energy is not easily dispersed in the other regions.

Therefore, the sealing agent **300** may be peeled off from a region where the adhesive force is relatively weak. Accordingly, the reliability of the organic light emitting display device may be reduced. Therefore, according to another embodiment of the present invention, a uniform adhesive force of the sealing agent **300** is provided by employing another laminated structure of the first conductive wires **140** as shown in FIG. **4**.

FIG. **4** is a plan view showing another embodiment of the first conductive wire **140** as shown in FIG. **1**. FIG. **5A** is a plan view showing a first conductive layer **140a'** as shown in FIG. **4**, and FIG. **5B** is a plan view showing contact holes **140c'** and a second conductive layer **140b'** as shown in FIG. **4**. Also, FIG. **6** is a cross-sectional view taken along the line II-II' as shown in FIG. **4**. In FIGS. **4** to **6**, detailed descriptions of the similar components as shown in FIGS. **2** and **3** are omitted for clarity.

Referring to FIGS. **4** to **6**, at least one region **140\_2** of the first conductive wire **140** is formed with a laminated structure that includes a first conductive layer **140a'** and a second conductive layer **140b'**.

The first conductive layer **140a'** includes first and second regions **140a1'** and **140a2'** that are physically disconnected to be spaced apart from each other. Here, an interface between the first and second regions **140a1'** and **140a2'** may be formed in a concavo-convex shape (or having matching protrusions units and receiving units) when viewed from the top.

Also, the interface between the first and second regions **140a1'** and **140a2'** is crisscrossed so that the upper lines and the lower lines with the concavo-convex shape can form a straight line, respectively.

Therefore, it is possible to disperse the interface between the first and second regions **140a1'** and **140a2'** of the first conductive layer **140a'** where they are physically disconnected with each other.

Also, the contact holes **140c'** through which the first and second conductive layer **140a'**, **140b'** are electrically coupled to each other are uniformly distributed over a region where the first conductive layer **140a'** and the second conductive layer **140b'** are overlapped with each other in this exemplary embodiment.

According to the exemplary embodiment as described above, the exemplary embodiment as shown in FIG. **4** may reduce the resistance of the first conductive wire **140** and prevent an antenna effect that may occur in the first conductive layer **140a'**. Also, the sealing agent **300** may be formed with a uniform adhesive force.

According to the described embodiment, the interface between the first and second regions **140a1'** and **140a2'** of the first conductive layer **140a'** that are physically disconnected from each other are uniformly dispersed, and the contact holes **140c'** through which the first and second conductive layers **140a'** and **140b'** are electrically coupled to each other are also uniformly distributed. Therefore, the sealing agent **300** disposed on the first conductive wire **140** can have a more uniform adhesive force.

Although only the laminated regions **140\_1** and **140\_2** of the first conductive wire **140** are shown in FIGS. **2** to **6**, the present invention is not particularly limited to the laminated structure of the first conductive wires **140**.

In some embodiments, the first conductive wire **140** may be formed with a single layer structure. Also, while one region of the first conductive wire **140** may be formed with one of the laminated structures according to the exemplary embodiments as shown in FIGS. **2** to **6**, other regions of the first conductive wire **140** may be formed with a single layer structure.

In another embodiment, the entire first conductive wire **140** or some regions of the first conductive wire **140** may be composed of a non-laminated region **140\_3** that is composed only of a second conductive layer **140b''** as shown in FIGS. **7** and **8**.

In this embodiment, contact holes **140c''** may be uniformly distributed in the insulating film **141** that is formed in a lower portion of the second conductive layer **140b''** so that the sealing agent **300** formed on the first conductive wire **140** can have a uniform adhesive force. Another insulating film **101** such as a buffer layer and/or a gate insulating film is formed in a lower portion of the contact holes **140c''**, and therefore this configuration may not affect the voltage level of the first pixel power source (ELVDD) supplied to the first conductive wire **140**.

While the present invention has been described in connection with certain exemplary embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims, and equivalents thereof.

What is claimed is:

1. An organic light emitting display device comprising:
  - a first substrate having a display unit on one surface thereof;
  - a second substrate overlapping with at least one region of the first substrate including the display unit;
  - a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and

a conductive wire on the first substrate and overlapping with at least a portion of the sealing agent and comprising a first conductive layer and a second conductive layer disposed on the first conductive layer, at least one region of the first conductive layer and at least one region of the second conductive layer formed at different levels and electrically coupled to each other through contact holes, the second conductive layer comprising a continuous region,

wherein the first conductive layer comprises a first region and a second region that are electrically coupled to each other through the second conductive layer and the contact holes and that are physically disconnected from each other, and an interface between the first region and the second region has a concavo-convex shape in a plane parallel to the one surface of the substrate.

2. The organic light emitting display device according to claim 1, wherein the interface between the first region and the second region of the first conductive layer has first straight sections extending in a first direction and second straight sections extending in the first direction, wherein the first straight sections and the second straight sections are alternately arranged such that the first and second straight sections are not aligned with each other along the first direction, wherein the first direction is a longitudinal direction of conductive wire.

3. The organic light emitting display device according to claim 1, wherein the contact holes are uniformly distributed throughout a region where the first conductive layer and the second conductive layer overlap with each other.

4. An organic light emitting display device comprising: a first substrate having a display unit on one surface thereof; a second substrate overlapping with at least one region of the first substrate including the display unit; a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and a conductive wire on the first substrate and overlapping with at least a portion of the sealing agent and comprising a first conductive layer and a second conductive layer disposed on the first conductive layer, at least one region of the first conductive layer and at least one region of the second conductive layer formed at different levels and electrically coupled to each other through contact holes, wherein the first conductive layer comprises a first region and a second region that are physically disconnected from each other, an interface between the first region and the second region has a concavo-convex shape in a plane parallel to the one surface of the substrate, the first conductive layer comprises a gate metal, the second conductive layer comprises a source/drain metal, and a gate insulating layer is between the first conductive layer and the second conductive layer.

5. The organic light emitting display device according to claim 1, wherein the conductive wire comprises a power line for supplying power of a power source to the display unit.

6. The organic light emitting display device according to claim 1, wherein the contact holes are uniformly distributed between the first conductive layer and the second conductive layer.

7. An organic light emitting display device comprising: a first substrate having a display unit on one surface thereof;

a second substrate overlapping with at least one region of the first substrate including the display unit; a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and a conductive wire on the first substrate and overlapping with at least a portion of the sealing agent,

wherein the conductive wire comprises a discontinuous first conductive layer comprising a first region and a second region and having receiving portions and protrusions spaced from and received by the receiving portions in a longitudinal direction of the conductive wire, and a continuous second conductive layer on an insulating film having a plurality of contact holes formed therein, and

wherein the first region and the second region are electrically coupled to each other through the second conductive layer and the contact holes.

8. The organic light emitting display device according to claim 7, wherein the plurality of contact holes are uniformly distributed in the insulating film between the first conductive layer and the second conductive layer.

9. An organic light emitting display device comprising: a first substrate having a display unit on one surface thereof;

a second substrate overlapping with at least one region of the first substrate including the display unit;

a sealing agent attached between the first substrate and the second substrate for sealing the display unit; and

a conductive wire on the first substrate overlapping with at least a portion of the sealing agent and comprising a first conductive layer and a second conductive layer comprising a continuous region, at least one region of the first conductive layer and at least one region of the second conductive layer formed at different levels and electrically coupled to each other through contact holes,

wherein the first conductive layer comprises a first region and a second region that are physically disconnected from each other in a longitudinal direction of the conductive wire at a first end of the first region and a second end of the second region, and that are electrically coupled to each other through the second conductive layer and the contact holes, and the first end and the second end each comprise protrusions and receiving portions.

10. The organic light emitting display device according to claim 9, wherein the receiving portions of the first end are configured to receive the protrusions of the second end, and the receiving portions of the second end are configured to receive the protrusions of the first end.

11. The organic light emitting display device according to claim 9, wherein at least one of the protrusions of the first end extends further than another one of the protrusions of the first end, and at least one of the protrusions of the second end extends further than another one of the protrusions of the second end.

12. The organic light emitting display device according to claim 9, wherein the contact holes are uniformly distributed throughout a region where the first conductive layer and the second conductive layer overlap each other.

13. The organic light emitting display device according to claim 9, wherein the contact holes are uniformly distributed between the first conductive layer and the second conductive layer.

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|                |                             |                       |            |
|----------------|-----------------------------|-----------------------|------------|
| 专利名称(译)        | 有机发光显示装置                    |                       |            |
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摘要(译)

一种有机发光显示装置。有机发光显示装置包括第一基板，与第一基板的至少一个区域重叠的第二基板和附着在第一基板和第二基板之间的密封剂，以密封其间的显示单元。第一基板上的导电线与密封剂的至少一部分重叠，包括第一导电层和第二导电层，第二导电层具有形成在不同高度的至少一个区域，以通过接触孔彼此电连接。第一导电层和第二导电层被配置为减小导电线的电阻并改善密封剂的粘合力。

