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(54) ORGANIC LIGHT EMITTING DIODE DISPLAY AND DRIVING METHOD THEREOF

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(57) **ABSTRACT**

An organic light emitting diode (OLED) display and driving method thereof are disclosed. One inventive aspect includes a plurality of pixels, a scan driver, first and second power generation unit and a data driver. The scan driver supplies a first scan signal to odd-numbered scan lines during a first period and a second scan signal to even-numbered scan lines during a second period. The first and second power generation units set the pixels in a non-emission state during at least one frame of the first and second periods. The data driver supplies a data signal to data lines synchronous to the first and second scan signal.

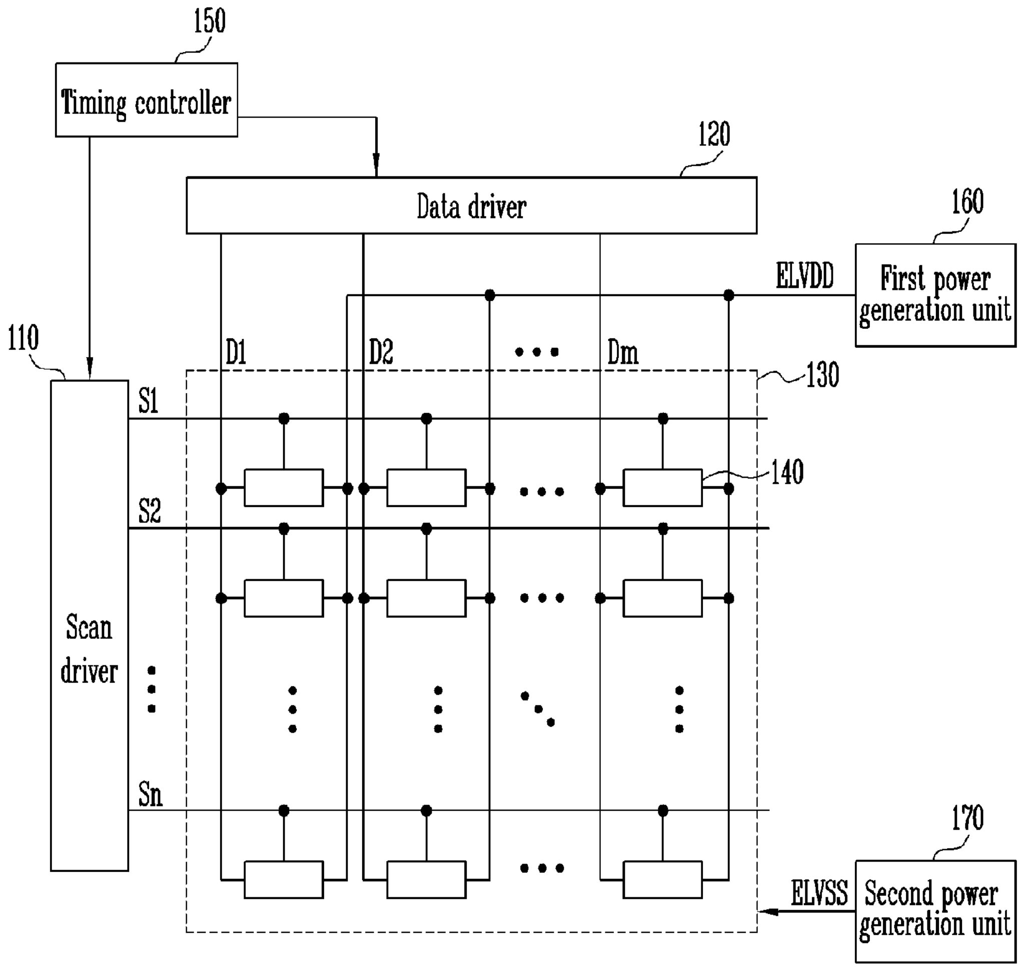


FIG. 1

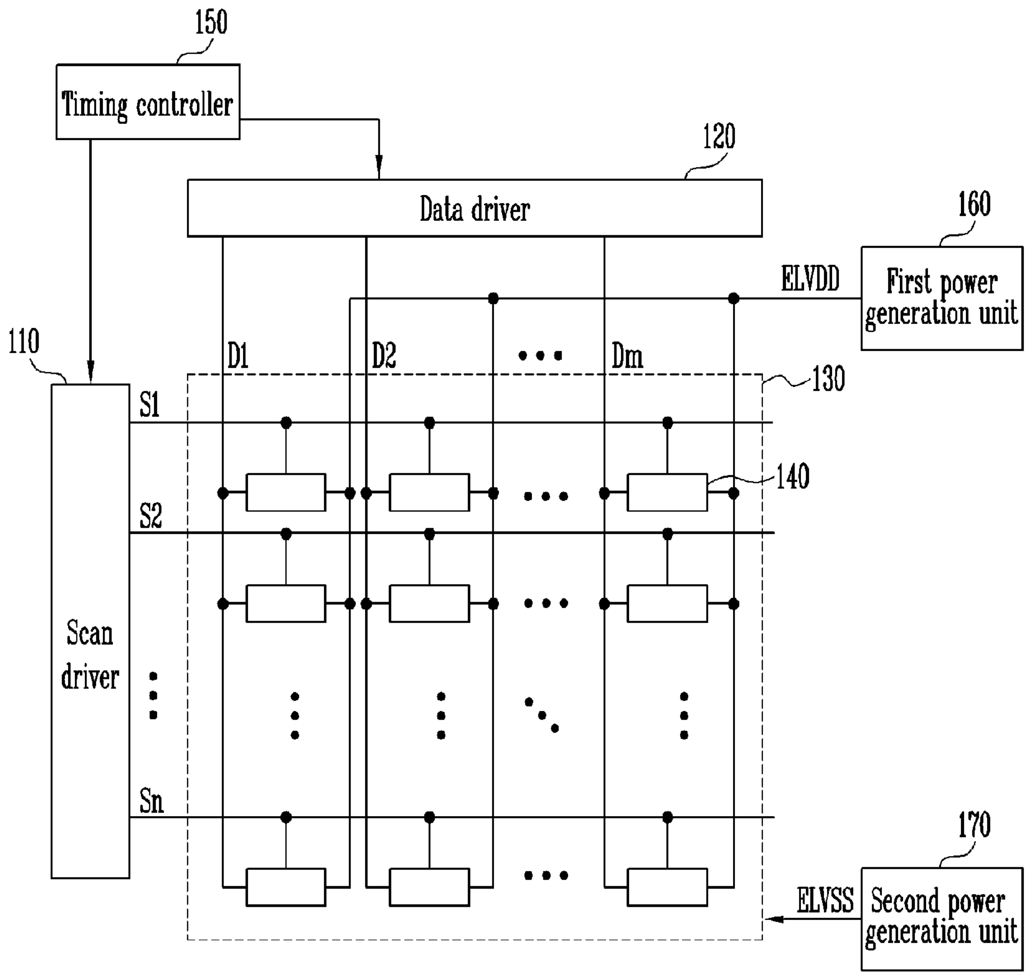

150
Timing controller
120
Data driver
160
First power generation unit
ELVDD
110
D1
D2
Dm
130
S1
140
S2
Scan driver
Sn
170
ELVSS
Second power generation unit

FIG. 2

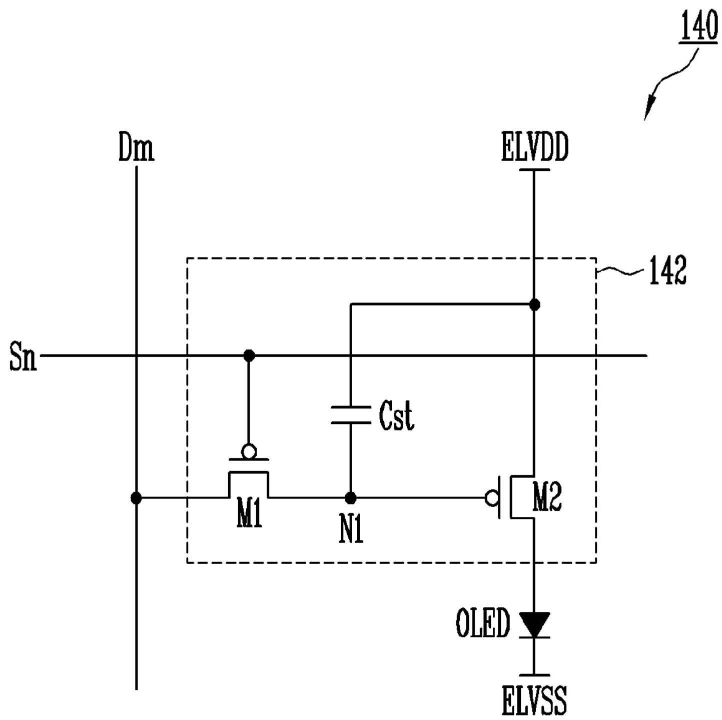


FIG. 3A

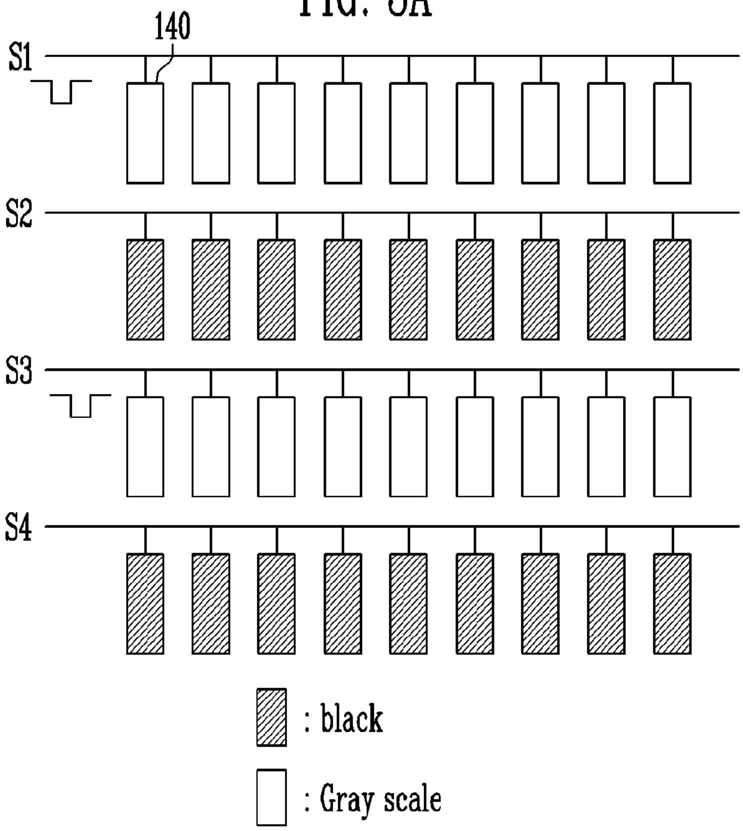

140
S1
S2
S3
S4
: black
: Gray scale

FIG. 3B

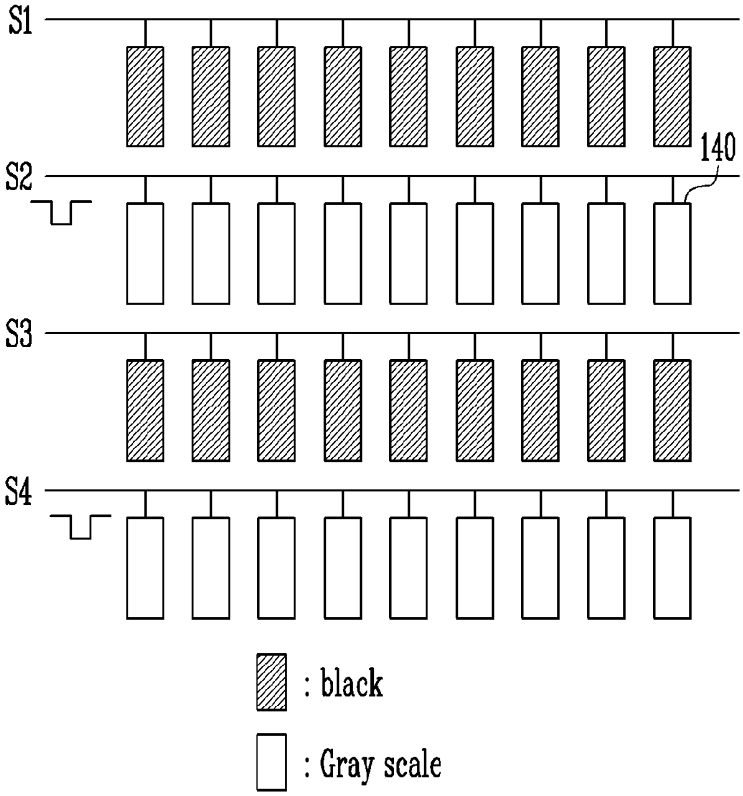

S1
140
S2
S3
S4
: black
: Gray scale

FIG. 4

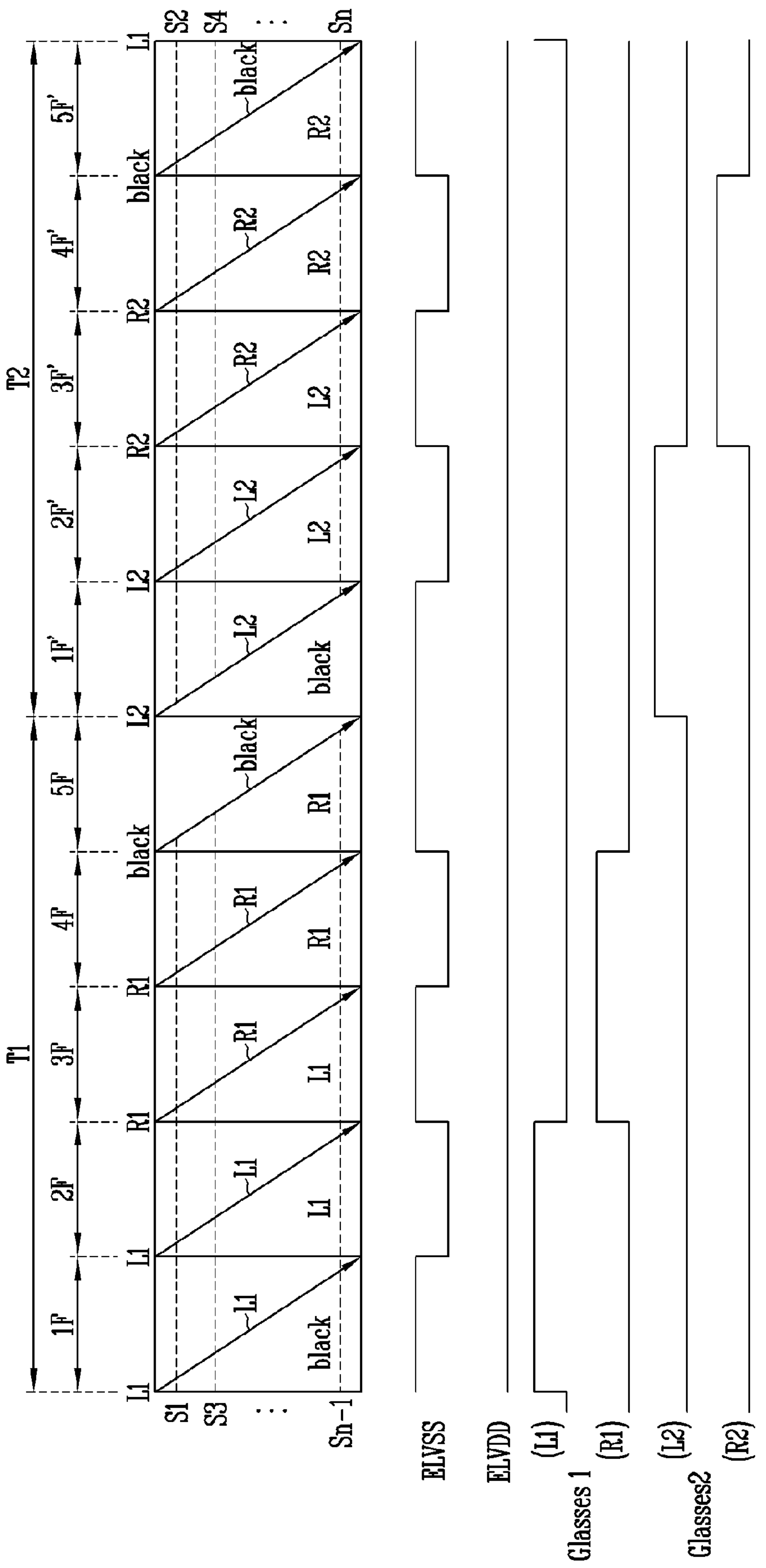

T1
T2
1F
2F
3F
4F
5F
1F'
2F'
3F'
4F'
5F'
L1
R1
black
L2
R2
S1
S2
S3
S4
Sn-1
Sn
ELVSS
ELVDD
Glasses 1
(L1)
(R1)
Glasses2
(L2)
(R2)

FIG. 5

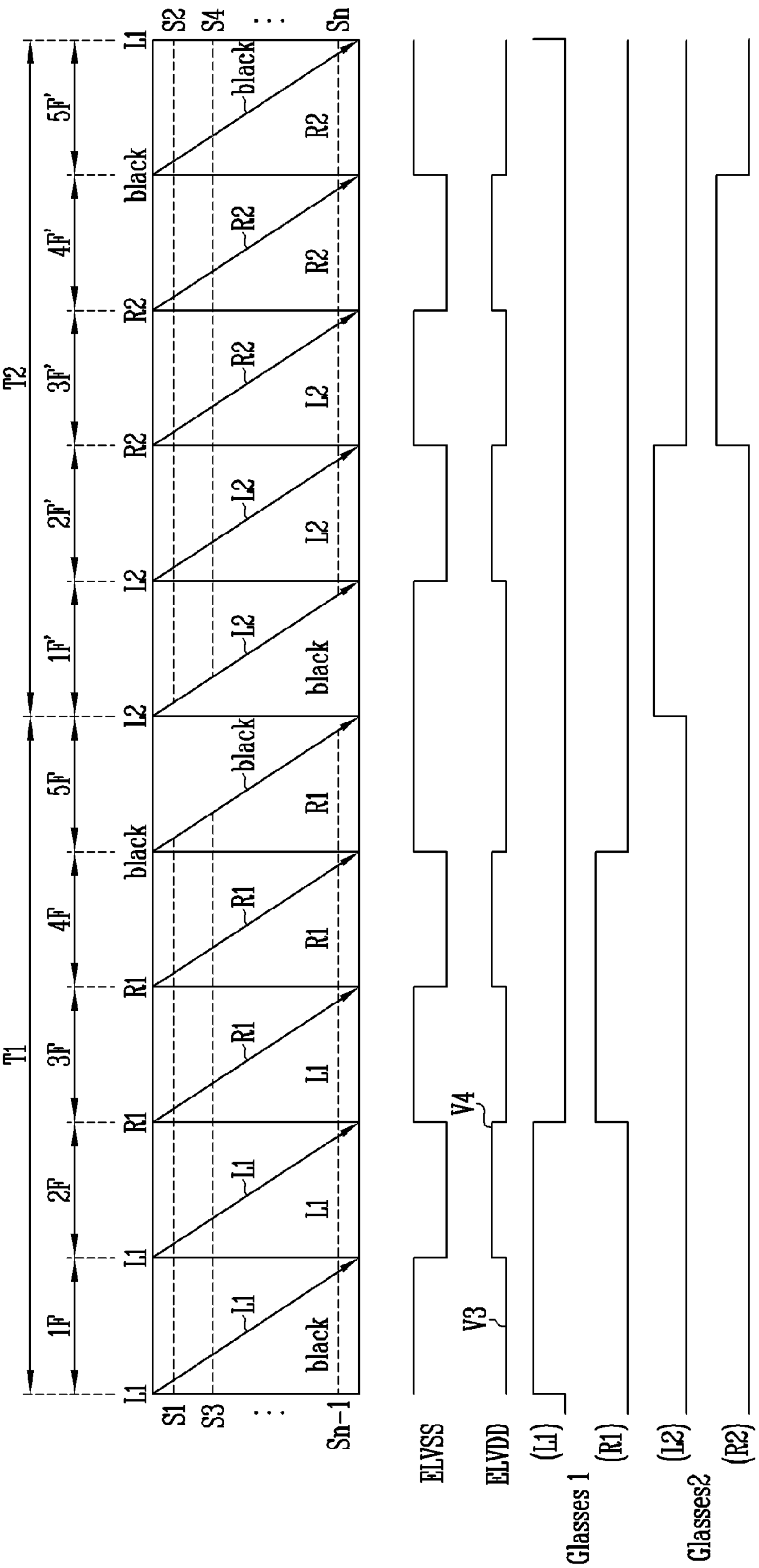

T1
T2
1F
2F
3F
4F
5F
1F'
2F'
3F'
4F'
5F'
L1
R1
L2
R2
black
S1
S2
S3
S4
Sn-1
Sn
ELVSS
ELVDD
V3
V4
Glasses 1
Glasses2
(L1)
(R1)
(L2)
(R2)

FIG. 6

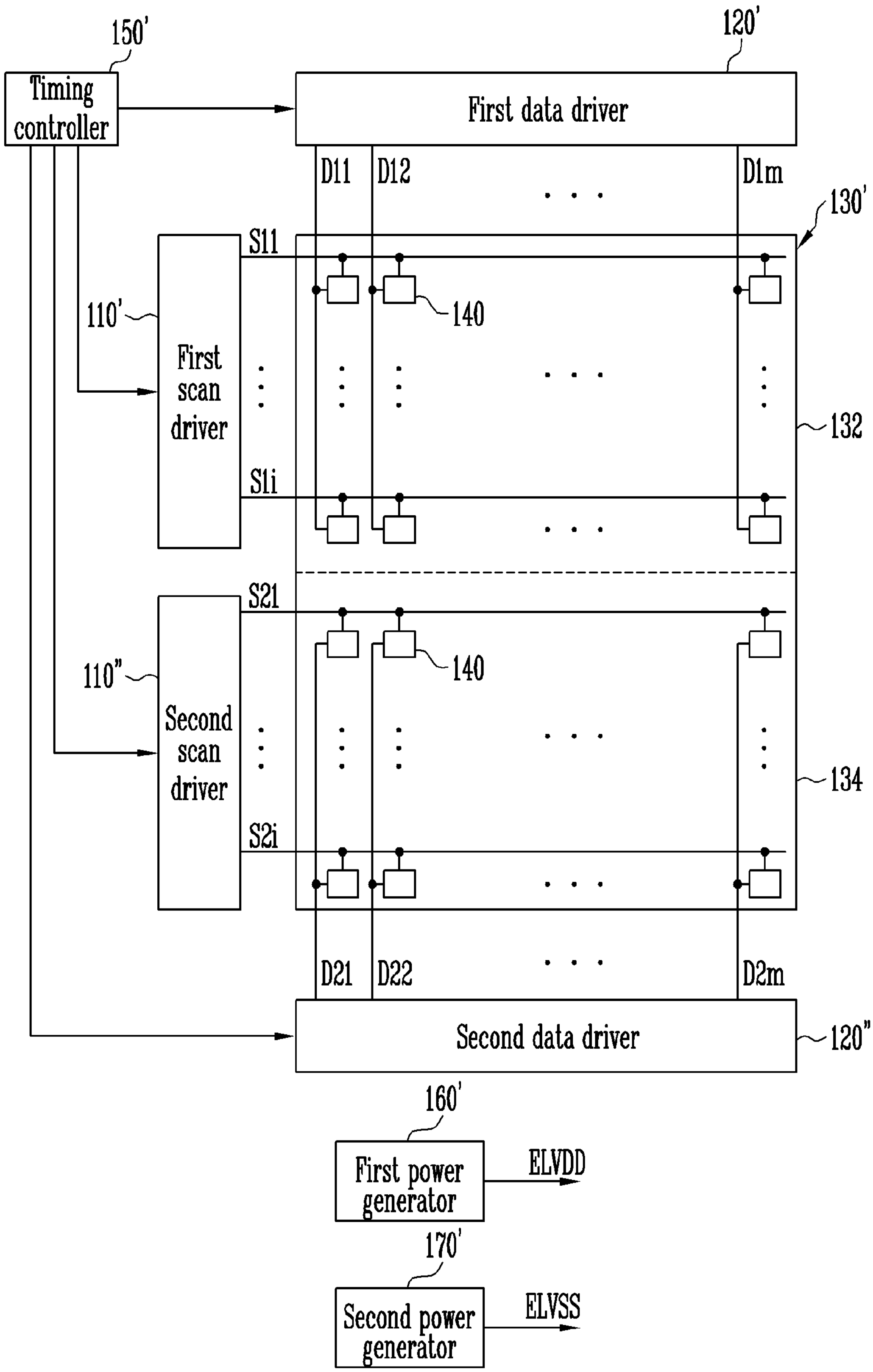

150'
120'
Timing controller
First data driver
D11
D12
D1m
130'
S11
110'
140
First scan driver
132
S1i
S21
110"
140
Second scan driver
134
S2i
D21
D22
D2m
Second data driver
120"
160'
First power generator
ELVDD
170'
Second power generator
ELVSS

FIG. 7

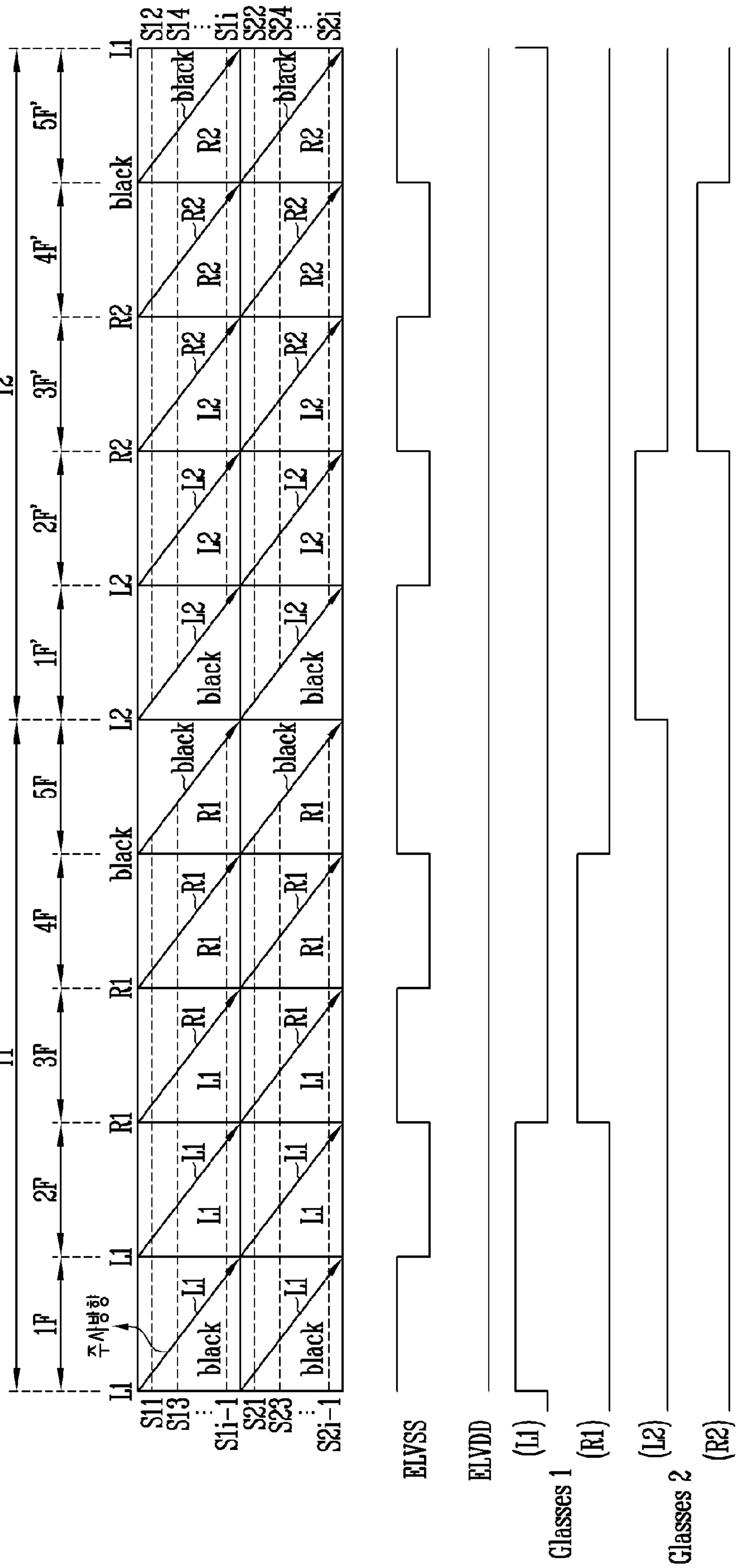
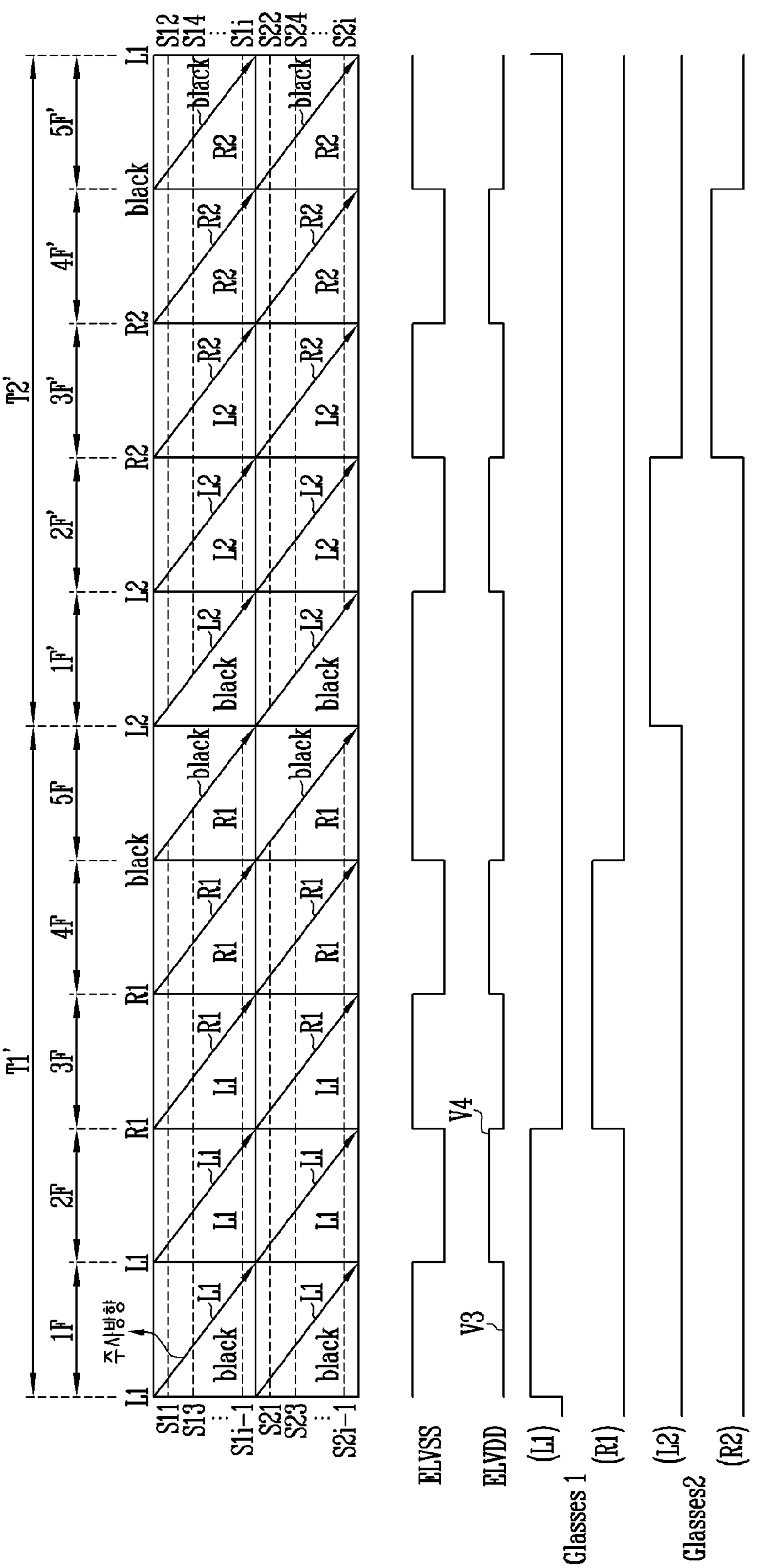

T1'
T2'
1F
2F
3F
4F
5F
1F'
2F'
3F'
4F'
5F'
주사방향
S11
S13
S1i-1
S21
S23
S2i-1
S12
S14
S1i
S22
S24
S2i
L1
R1
L2
R2
black
ELVSS
ELVDD
Glasses 1
(L1)
(R1)
Glasses 2
(L2)
(R2)

FIG. 8


T1'
T2'
1F
2F
3F
4F
5F
1F'
2F'
3F'
4F'
5F'
주사방향
black
L1
R1
L2
R2
S11
S13
S1i-1
S21
S23
S2i-1
S12
S14
S1i
S22
S24
S2i
ELVSS
ELVDD
V3
V4
Glasses 1
(L1)
(R1)
Glasses2
(L2)
(R2)

ORGANIC LIGHT EMITTING DIODE DISPLAY AND DRIVING METHOD THEREOF

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to and the benefit of Korean Patent Application No. 10-2013-0134611, filed on Nov. 7, 2013, in the Korean Intellectual Property Office, the entire contents of which are incorporated herein by reference in their entirety.

BACKGROUND

[0002] 1. Field

[0003] Various aspects of the disclosed technology relate to an organic light emitting diode display and a driving method thereof with improved pixel luminance and gray scale.

[0004] 2. Description of the Related Technology

[0005] With the development of information technologies, the importance of a display as a connection medium between information increases. Accordingly, flat panel displays (FPDs) such as a liquid crystal display (LCD), an organic light emitting diode (OLED) display and a plasma display panel (PDP) are increasingly used.

[0006] Among these FPDs, the OLED displays images using organic light emitting diodes that emit light through recombination of electrons and holes. The organic light emitting diode display has a fast response speed and is driven with low power consumption.

SUMMARY OF CERTAIN INVENTIVE ASPECTS

[0007] Embodiments provide an organic light emitting diode display and a driving method thereof, which can improve display quality.

[0008] One aspect of the disclosed technology provides an organic light emitting diode display, including: pixels configured to control whether current is supplied from a first power source to a second power source via an organic light emitting diode, corresponding to a data signal, a scan driver configured to supply a scan signal to odd-numbered scan lines during a first period including a plurality of frames, and supply a scan signal to even-numbered scan lines during a second period including a plurality of frames, a second power generation unit configured to control the voltage of the second power source so that the pixels is set in a non-emission state during at least one frame among the frames included in the first and second periods, and a data driver configured to supply a data signal to data lines, corresponding to the scan signal.

[0009] Each of the first and second periods can include five frames.

[0010] The data driver can supply a left data signal of a first image during first and second frames of the first period, supply a right data signal of the first image during third and fourth frames of the first period, and supply a black data signal during a fifth frame of the first period. The data driver can supply a left data signal of a second image during first and second frames of the second period, supply a right data signal of the second image during third and fourth frames of the second period, and supply a black data signal during a fifth frame of the second period.

[0011] Light can be supplied the left side of first glasses during the first and second frames of the first period, and light can be supplied to the right side of the first glasses during the third and fourth frames of the first period.

[0012] Light can be supplied to the left side of second glasses during the first and second frames of the first period, and light can be supplied to the right side of the second glasses during the third and fourth frames of the second period.

[0013] The second power generation unit can supply a second power source having a high voltage so that the pixels do not emit light during the first, third and fifth frames of the first and second periods, and supply a second power source having a low voltage so that the pixels emit light during the second and fourth frames of the first and second periods.

[0014] The voltage value of the low voltage can be set so that light with a desired luminance is generated corresponding to a data during the second and fourth frames of the first and second periods.

[0015] The organic light emitting diode display can include a first power generator configured to generate the first power source. The first power generation unit can supply a first power source having a third voltage at which the pixels emit light during the first, third and fifth frames of the first and second periods, and supply a fourth voltage higher than the third voltage during the second and fourth frames of the first and second periods.

[0016] Each frame included in the first and second periods can include a plurality of subfields. The scan driver can supply a scan signal to the odd-numbered or even-numbered scan lines every subfield.

[0017] The data driver can supply a first data signal where the pixels emit light, corresponding to the scan signal, or a second data signal where the pixels do not emit light.

[0018] The first and second periods can be formed to alternate with each other.

[0019] A display unit including the pixels can be divided into upper and lower units. The scan driver can be configured with a first scan driver for driving scan lines formed in the upper unit, and a second scan driver for driving scan lines formed in the lower unit. The data driver can be configured with a first data driver for driving data lines formed in the upper unit, and a second driver for driving data lines formed in the lower unit.

[0020] The first and second scan drivers can progressively supply a scan signal to the odd-numbered or even-numbered scan lines.

[0021] Another aspect of the disclosed technology provides a method of driving an organic light emitting diode display, the method including: supplying a scan signal to odd-numbered scan lines during a plurality of frames included in a first period, supplying a left or right data signal of a first image to be synchronized with the scan signal supplied to the odd-numbered scan lines during the first period, supplying a scan signal to even-numbered scan lines during a plurality of frames included in a second period, and supplying left or right data signal of a second image to by synchronized with the scan signal to the even-numbered scan lines during the second period.

[0022] The first and second periods can be formed to alternate with each other.

[0023] Each of the first and second periods can include five frames.

[0024] The left data signal of the first image can be supplied during first and second frames of the first period, the right data signal of the first image can be supplied during third and fourth frames of the first period, and a black data signal can be supplied during a fifth frame of the first period. The left data signal of the second image can be supplied during first and second frames of the second period, the right data signal of the second image can be supplied during third and fourth frames of the second period, and a black data signal can be supplied during a fifth frame of the second period.

[0025] Pixels can be set in a non-emission state during the first, third and fifth frames of the first and second periods.

[0026] The pixels can be control whether current flowing a first power source to a second power source via an organic light emitting diode is supplied. The second power source can be set to a high voltage during the first, third and fifth frames of the first and second periods.

[0027] The first power source can be set to a third voltage at which the pixels emit light during the first, third and fifth frames of the first and second periods. The first power source can be set to a fourth voltage higher than the third voltage during the second and fourth frames of the first and second periods.

[0028] Light can be supplied the left side of first glasses during the first and second frames of the first period, and light can be supplied to the right side of the first glasses during the third and fourth frames of the first period.

[0029] Light can be supplied to the left side of second glasses during the first and second frames of the first period, and light can be supplied to the right side of the second glasses during the third and fourth frames of the second period.

[0030] Each frame included in the first and second periods can include a plurality of subfields.

[0031] The left and right data signals supplied during the first and second periods can control the emission or non-emission of the pixels.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] Exemplary embodiments will now be described more fully hereinafter with reference to the accompanying drawings; however, they can be embodied in different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the exemplary embodiments to those skilled in the art.

[0033] In the drawing figures, dimensions can be exaggerated for clarity of illustration. It will be understood that when an element is referred to as being "between" two elements, it can be the only element between the two elements, or one or more intervening elements can also be present. Like reference numerals refer to like elements throughout.

[0034] FIG. **1** is a diagram illustrating an organic light emitting diode display according to an embodiment of the disclosed technology.

[0035] FIG. **2** is a circuit diagram illustrating a pixel according to an embodiment of the disclosed technology.

[0036] FIGS. **3**A and **3**B are diagrams illustrating an operating process of the organic light emitting diode display according to an embodiment of the disclosed technology.

[0037] FIG. **4** is a diagram illustrating a driving method according to an embodiment of the disclosed technology.

[0038] FIG. **5** is a diagram illustrating a driving method according to another embodiment of the disclosed technology.

[0039] FIG. **6** is a diagram illustrating an organic light emitting diode display according to another embodiment of the disclosed technology.

[0040] FIG. **7** is a diagram illustrating a driving method according to still another embodiment of the disclosed technology.

[0041] FIG. **8** is a diagram illustrating a driving method according to still another embodiment of the disclosed technology.

DETAILED DESCRIPTION OF CERTAIN INVENTIVE EMBODIMENTS

[0042] Hereinafter, certain exemplary embodiments according to the disclosed technology 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 can be not only directly coupled to the second element but can also be 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.

[0043] FIG. **1** is a diagram illustrating an organic light emitting diode display according to an embodiment of the disclosed technology. Hereinafter, it will be assumed that, for convenience of illustration, the organic light emitting diode display is driven using a dual view method in which different viewers watches two different 3D images displayed in a display unit **130**.

[0044] Referring to FIG. **1**, the organic light emitting diode display according to this embodiment includes the display unit **130**, a scan driver **110**, a data driver **120** and a timing controller **150**. The display unit **130** is configured to include pixels **140**, which are respectively formed at intersection portions of scan lines S**1** to Sn and data lines D**1** to Dm. The scan driver **110** is configured to drive the scan lines S**1** to Sn. The data driver **120** is configured to drive the data lines D**1** to Dm. The timing controller **150** is configured to control the scan driver **110** and the data driver **120**.

[0045] The organic light emitting diode display according to this embodiment further includes a first power generation unit **160** and a second power generation unit **170**. The first power generation unit **160** is configured to generate a first power source ELVDD. The second power generation unit **170** is configured to generate a second power source ELVSS.

[0046] The timing controller **150** controls the scan driver **110** and the data driver **120**, corresponding to synchronization signals supplied from an outside thereof.

[0047] The scan driver **110** progressively supplies a scan signal to odd-numbered scan lines S**1**, S**3**, . . . during a first period including a plurality of frames. The scan driver **110** progressively supplies a scan signal to even-numbered scan lines S**2**, S**4**, . . . during a second period including a plurality of frames, which is linked to the first period. Here, each of the first and second periods includes the same number of frames and are repetitively formed to alternate with each other.

[0048] In one exemplary implementation, the first period is configured with five frames. A first image among images to be displayed in the display unit **130** is displayed during the first period. During the first period, a view wearing first glasses recognizes the first image as a 3D screen. The second period is configured with five frames, and a second image among the images to be displayed in the display unit **130** is displayed during the second period. During the second period, a view wearing second glasses recognizes the second image as a 3D screen.

[0049] The data driver **120** generates a data signal, corresponding to a data supplied from the timing controller **150**, and supplies the generated data signal to the data lines D**1** to Dm. Here, the data driver **120** supplies left and right data signals of the first image during the first period, and supplies left and right data signals of the second image during the second period.

[0050] Meanwhile, the left and right data signals supplied from the data driver **120** are set to a voltage at which the emission or non-emission of the pixels **140** is controlled. That is, the data driver **120** supplies, as the left and right data signals, first data signals where the pixels emit light or second data signals where the pixels does not emit light. In this case, the pixels **140** is driven using a digital driving method in which a gray scale is expressed corresponding to an emission time thereof.

[0051] The display unit **130** receives first and second power sources ELVDD and ELVSS supplied from an outside thereof. The display unit **130** supplies the received first and second power sources ELVDD and ELVSS to each pixel **140**. Each pixel **140** implements a predetermined gray scale while supplying current of an organic light emitting diode (emitting light), corresponding to a data signal, or not supplying the current (not emitting light). The pixels **140** can be implemented with various types of circuits driven using the digital driving method, which are currently known in the art.

[0052] The first power generation unit **160** supplies the voltage of the first power source ELVDD, at which the pixels **140** can emit light during the first and second periods.

[0053] The second power generation unit **170** controls the voltage of the second power source ELVSS so that the pixels **140** do not emit light during some frames of the first and second periods. This will be described in detail later.

[0054] FIG. **2** is a circuit diagram illustrating a pixel according to an embodiment of the disclosed technology. For convenience of illustration, a pixel **140** formed on an n-th horizontal line and an m-th vertical line will be shown in FIG. **2**.

[0055] Referring to FIG. **2**, the pixel **140** according to this embodiment includes an organic light emitting diode OLED and a pixel circuit **142**. The pixel circuit **142** is coupled to a data line Dm and a scan line Sn to control the organic light emitting diode OLED.

[0056] An anode electrode of the organic light emitting diode OLED is coupled to the pixel circuit **142**. A cathode electrode of the organic light emitting diode OLED is coupled to the second power source ELVSS. The organic light emitting diode OLED is set in an emission state when current is supplied to the pixel circuit **142**. The organic light emitting diode OLED is set in a non-emission state when the current is not supplied.

[0057] The pixel circuit **142** receives a data signal from the data line Dm when a scan signal is supplied to the scan line Sn. To this end, the pixel circuit **142** includes a first transistor M**1**, a second transistor M**2** and a storage capacitor Cst.

[0058] A first electrode of the first transistor M**1** is coupled to the data line Dm, and a second electrode of the first transistor M**1** is coupled to a first node N**1**. A gate electrode of the first transistor M**1** is coupled to the scan line Sn. When the scan signal is supplied to the scan line Sn, the first transistor M**1** is turned on to allow the data line Dm and the first node N**1** to be electrically coupled to each other. If the first transistor M**1** is turned on, the data signal from the data line Dm is supplied to the first node N**1**.

[0059] The storage capacitor Cst is coupled between the first power source ELVDD and the first node N**1**. The storage capacitor Cst stores a voltage corresponding to the data signal.

[0060] A first electrode of the second transistor M**2** is coupled to the first power source ELVDD. A second electrode of the second transistor M**2** is coupled to the anode electrode of the organic light emitting diode OLED. A gate electrode of the second transistor M**2** is coupled to the first node N**1**. The second transistor M**2** is turned on or turned off corresponding to the voltage of the data signal, stored in the storage capacitor Cst.

[0061] If the second transistor M**2** is turned on, current is supplied to the organic light emitting diode OLED during a corresponding period, and accordingly, the pixel **140** is set in the emission state. If the second transistor M**2** is turned off, the current is not supplied to the organic light emitting diode OLED during a corresponding period, and accordingly, the pixel **140** is set in the non-emission state.

[0062] FIGS. **3**A and **3**B are diagrams illustrating an operating process of the organic light emitting diode display according to an embodiment of the disclosed technology.

[0063] Referring to FIGS. **3**A and **3**B, a scan signal is first supplied to the odd-numbered scan lines S**1**, S**3**, . . . during the first period as shown in FIG. **3**A. Accordingly, pixels **140** formed on odd-numbered horizontal lines emit light, corresponding to a data. On the other hand, the pixels **140** coupled to the even-numbered scan lines S**2**, S**4**, . . . maintain the non-emission state (i.e., the black state), corresponding to the data signal (second data signal) supplied in a previous second period.

[0064] If the scan signal is supplied to only the odd-numbered scan lines S**1**, S**3**, . . . during the first period as described above, i.e., if the scan signal is supplied to half of the pixels **140** included in the display unit **130**, it is possible to sufficiently secure a charging time of the pixels **140**.

[0065] As shown in FIG. **3**B, the scan signal is supplied to the even-numbered scan lines S**2**, S**4**, . . . during the second period, and accordingly, the pixels **140** formed on even-numbered horizontal lines emit light, corresponding to a data. On the other hand, the pixels **140** coupled to the odd-numbered scan lines S**1**, S**3**, . . . maintains the non-emission state (i.e., the black state) state, corresponding to the data signal (i.e., the second data signal) supplied in a previous first period.

[0066] If the scan signal is supplied to only the even-numbered scan lines S**2**, S**4**, . . . during the second period as described above, i.e., if the scan signal is supplied to half of the pixels **140** included in the display unit **130**, it is possible to sufficiently secure a charging time of the pixels **140**.

[0067] Additionally, the scan signal is supplied to the odd-numbered scan lines S**1**, S**3**, . . . during the first period. Hence a data signal of a desired gray scale is not supplied to the even-numbered scan lines S**2**, S**4**, ... That is, half of the data in one frame is not displayed as an image. However, data supplied to adjacent horizontal lines are identical or similar to each other. Hence, a desired image can be displayed even though a gray scale is implemented in only the pixels **140** coupled to the odd-numbered scan lines S**1**, S**3**, ...

[0068] Similarly, the scan signal is supplied to the even-numbered scan lines S**2**, S**4**, . . . during the second period. Hence, a data signal of a desired gray scale is not supplied to the odd-numbered scan lines S**1**, S**3**, ... That is, half of the data in the one frame is not displayed as an image. However, data supplied to adjacent horizontal lines are identical or similar to each other. Hence, a desired image can be displayed even though a gray scale is implemented in only the pixels **140** coupled to the even-numbered scan lines S**2**, S**4**, ...

[0069] Actually, the organic light emitting diode display of the disclosed technology is implemented using the dual view method. Although some data are not displayed during the first and second periods, the first and second images can be implemented. Additionally, if the even-numbered horizontal lines are implemented with the black in the disclosed technology, it is possible to implement more lifelike 3D images (to minimize false contour noise, or the like).

[0070] FIG. **4** is a diagram illustrating a driving method according to an embodiment of the disclosed technology.

[0071] Referring to FIG. **4**, the first period T**1** is configured with five frames **1**F to **5**F. The second period T**2** is configured with five frames **1**F' to **5**F'.

[0072] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during each frame included in the first period T**1**. Data signals are supplied to the data lines D**1** to Dm, corresponding to the scan signal. The pixels **140** formed on the even-numbered horizontal lines are set in the black (non-emission) state during the first period T**1**.

[0073] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during a first frame **1**F included in the first period T**1** and a left data signal L**1** of the first image is progressively supplied corresponding to the scan signal. Here, the scan signal is progressively supplied and hence the pixels **140** formed on the odd-numbered horizontal lines store the left data signal L**1** of the first image or the black data signal, corresponding to the positions thereof. Thus, the second power source ELVSS is set to a high voltage so that an undesired image is not displayed during the first frame **1**F. If the second power source ELVSS is set to the high voltage, the pixels **140** are set in the non-emission state.

[0074] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during a second frame **2**F included in the first period T**1**, and the left data signal L**1** of the first image is progressively supplied corresponding to the scan signal. Here, only the left data signal L**1** of the first image is stored in the pixels **140** formed on the odd-numbered horizontal lines during the second frame period **2**F. Thus, the second power source ELVSS is set to a low voltage during the second frame **2**F. Accordingly, the pixels **140** formed on the odd-numbered horizontal lines emit light, corresponding to the left data signal L**1** of the first image during the second frame **2**F. Additionally, the left data signal L**1** of the first image supplied during the second frame **2**F can be set as a signal identical to the left data signal L**1** of the first image supplied during the first frame **1**F.

[0075] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during a third frame **3**F included in the first period T**1**. A right data signal R**1** of the first image is progressively supplied corresponding to the scan signal. Here, the scan signal is progressively supplied. Hence, the left and right data signals L**1** and R**1** of the first image are mixed in the third frame **3**F. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the third frame **3**F.

[0076] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during a fourth frame **4**F included in the first period T**1**. The right data signal R**1** of the first image is progressively supplied corresponding to the scan signal. Here, only the right data signal R**1** of the first image is stored in the pixels **140** formed on the odd-numbered horizontal lines in the fourth frame **4**F. Thus, the second power source ELVSS is set to the low voltage during the fourth frame **4**F. Accordingly, the pixels **140** formed on the odd-numbered horizontal lines emit light, corresponding to the right data signal R**1** of the first image during the fourth frame **4**F. Additionally, the right data signal R**1** of the first image supplied during the fourth frame **4**F can be set as a signal identical to the right data signal R**1** of the first image supplied during the third frame **3**F.

[0077] A scan signal is progressively supplied to the odd-numbered scan lines S**1**, S**3**, . . . during a fifth frame **5**F included in the first period T**1**. The black data signal (i.e., the second data signal) is supplied corresponding to the scan signal. Then, the black data signal is progressively supplied to the pixels **140** coupled to the odd-numbered scan lines S**1**, S**3**, ...

[0078] Meanwhile, light is supplied to the left side of the first glasses during the first and second frames **1**F and **2**F of the first period T**1**, and light is supplied to the right side of the first glasses during the third and fourth frames **3**F and **4**F of the first period T**1**. Then, the viewer wearing the first glasses recognizes the first image as a 3D screen.

[0079] Additionally, in the disclosed technology, the pixels **140** emit light in only the second and fourth frames **2**F and **4**F among the consecutive five frames. Thus, the first image with a luminance lower than that to be implemented can be displayed. In the disclosed technology, in order to overcome such a disadvantage, the low voltage of the second power source ELVSS is controlled so that an image of a desired gray scale (luminance) can be implemented during the second and fourth frames **2**F and **4**F. In one exemplary implementation, the second power generation unit **170** controls the low voltage of the second power source ELVSS to have a voltage less than a generally supplied voltage. Therefore, the desired luminance can be implemented corresponding to a data.

[0080] Meanwhile, although it has been illustrated that, for convenience of illustration, the scan signal is supplied to the odd-numbered scan lines S**1**, S**3**, . . . every frame of the first period T**1**, the disclosed technology is not limited thereto. Actually, the pixels **140** of the disclosed technology are driven using the digital driving method. Accordingly, each frame **1**F to **5**F can be divided into a plurality of subfields so that a gray scale is implemented. In this case, a scan signal is supplied to the odd-numbered scan lines S**1**, S**3**, . . . every subfield and a data signal corresponding to the scan signal is supplied. Actually, the pixels **140** of the disclosed technology can be driven using various forms of digital driving methods currently known in the art.

[0081] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during each frame included in the second period T**2**. Data signals are supplied to the data lines D**1** to Dm, corresponding to the scan signal. During the second period **2**T, the pixels **140** formed on the odd-numbered horizontal lines are set in the black state, corresponding to the data signal supplied in the previous period.

[0082] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during a first frame **1**F' included in the second period T**2**. A left data signal L**2** of the second image is progressively supplied corresponding to the scan signal. Here, the scan signal is progressively supplied. Hence, the pixels **140** formed on the even-numbered horizontal lines store the left data signal L**2** of the second image or the black data signal, corresponding to the positions thereof.

Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the first frame **1**F'.

[0083] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during a second frame **2**F' included in the second period T**2**. The left data signal L**2** of the second image is progressively supplied corresponding to the scan signal. Here, only the left data signal L**2** of the second image is stored in the pixels **140** formed on the even-numbered horizontal lines in the second frame **2**F'. The second power source ELVSS is set to the low voltage in the second frame **2**F'. Accordingly, the pixels **140** formed on the even-numbered horizontal lines emit light, corresponding to the left data signal L**2** of the second image during the second frame **2**F'. Additionally, the left data signal L**2** of the second image supplied during the second frame **2**F' can be set as a signal identical to the left data signal L**2** of the second image supplied to the first frame **1**F'.

[0084] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during a third frame **3**F' included in the second period T**2**. A right data signal R**2** of the second image is progressively supplied corresponding to the scan signal. Here, the scan signal is progressively supplied. Hence, the left and right data signals L**2** and R**2** of the second image are mixed during the third frame **3**F'. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the third frame **3**F'.

[0085] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during a fourth frame **4**F' included in the second period T**2**. The right data signal R**2** of the second image is progressively supplied corresponding to the scan signal. Here, only the right data signal R**2** of the second image is stored in the pixels **140** formed on the even-numbered horizontal lines during the fourth frame **4**F'. The second power source ELVSS is set to the low voltage in the fourth frame **4**F'. Accordingly, the pixels **140** formed on the even-numbered horizontal lines emit light, corresponding to the right data signal R**2** of the second image during the fourth frame **4**F'. Additionally, the right data signal R**2** of the second image supplied during the fourth frame **4**F' can be set as a signal identical to the right data signal R**2** of the second image supplied during the third frame **3**F'.

[0086] A scan signal is progressively supplied to the even-numbered scan lines S**2**, S**4**, . . . during a fifth frame **5**F' included in the second period T**2**. The black data signal is supplied corresponding to the scan signal. Then, the black data signal is supplied to the pixels **140** coupled to the even-numbered scan lines S**2**, S**4**, ...

[0087] Meanwhile, light is supplied to the left side of the second glasses in the first and second frames **1**F' and **2**F' of the second period T**2**, and light is supplied to the right side of the second glasses in the third and fourth frames **3**F' and **4**F'. Then, the viewer wearing the second glasses recognizes the second image as a 3D screen. Actually, in the disclosed technology, 3D images are implemented by repeating the first and second periods T**1** and T**2** described above.

[0088] Additionally, in the disclosed technology, the second power generation unit **170** controls the low voltage of the second power source ELVSS to have a voltage lower than that generally supplied during the second and fourth frames **2**F' and **4**F', so that a desired luminance can be implemented corresponding to a data.

[0089] Meanwhile, although it has been illustrated in FIG. **4** that, for convenience of illustration, the scan signal is supplied to the even-numbered scan lines S**2**, S**4**, . . . every frame of the second period T**2**, the disclosed technology is not limited thereto. Actually, the pixels **140** of the disclosed technology are implemented using the digital driving method. Accordingly, each frame **1**F' to **5**F' can be divided into a plurality of subfields so that a gray scale is implemented. In this case, a scan signal is supplied to the even-numbered scan lines S**2**, S**4**, . . . every subfield. A data signal corresponding to the scan signal is supplied. Actually, the pixels **140** of the disclosed technology can be driven using various forms of digital driving methods current known in the art.

[0090] FIG. **5** is a diagram illustrating a driving method according to another embodiment of the disclosed technology. In FIG. **5**, components identical to those of FIG. **4** are designated by like reference numerals, and their detailed descriptions will be omitted.

[0091] Referring to FIG. **5**, in this embodiment, the voltage of the first power source ELVDD is controlled. Specifically, the first power generation unit **160** supplies a first power source ELVDD set to a third voltage V**3** during the first frame **1**F or **1**F', the third frame **3**F or **3**F' and the fifth frame **5**F or **5**F', in which the pixels **140** are set in the non-emission state, and supplies a first power source ELVDD set to a fourth voltage V**4** higher than the third voltage V**3** during the second frame **2**F or **2**F' and the fourth frame **4**F or **4**F', in which the pixels **140** are set in the emission state.

[0092] Here, the third voltage V**3** is set as a voltage at which the pixels **140** can generally emit light in the digital driving method. Thus, the pixels **140** can stably store the voltage of a desired data signal during the first frame **1**F or **1**F', the third frame **3**F or **3**F' and the fifth frame **5**F or **5**F', in which the pixels **140** are set in the non-emission state. The fourth voltage V**4** is set as a voltage higher than the third voltage V**3**.

[0093] If the fourth voltage V**4** higher than the third voltage V**3** is supplied during the second frame **2**F or **2**F' and the fourth frame **4**F or **4**F', in which the pixels **140** emit light, the luminance of the pixels **140** is improved.

[0094] Meanwhile, in the aforementioned embodiment, the charging time has been secured by driving the odd-numbered or even-numbered scan lines. However, in this embodiment, a display unit **130'** is divided into upper and lower units **132** and **134** to be driven as shown in FIG. **6**, so that it is possible to additionally a charging time of the pixels **140**.

[0095] FIG. **6** is a diagram illustrating an organic light emitting diode display according to another embodiment of the disclosed technology. The substantial operation process of the organic light emitting diode display of FIG. **6** is identical to that of the organic light emitting diode display according to the embodiment shown in FIG. **1**, except that the display unit **130'** is divided into sub-units to be driven.

[0096] Referring to FIG. **6**, in the organic light emitting diode display, the display unit **130'** is divided into the upper and lower units **132** and **134** to be driven.

[0097] A first scan driver **110'** supplied a scan signal to scan lines S**11** to S**1***i* formed in the upper unit **132**. In one exemplary implementation, the first driver **110'** progressively supplies a scan signal to odd-numbered scan lines S**11**, S**13**, . . . formed in the upper unit **132** during a first period T**1'** shown in FIG. **7**. The first scan driver **110'** progressively supplies a scan signal to even-numbered scan lines S**22**, S**24**, . . . formed in the upper unit **132** during a second period T**2'**.

[0098] A second scan driver **110"** supplies a scan signal to scan lines S**21** to S**2***i* formed in the lower unit **134**. In one exemplary implementation, the second scan driver **110"** progressively supplies a scan signal to odd-numbered scan lines S21, S23, . . . formed in the lower unit **134** during the first period T1'. The second scan driver **110"** progressively supplies a scan signal to even-numbered scan lines S22, S24, . . . formed in the lower unit **134** during the second period T2'.

[0099] A first data driver **120'** generates a data signal, corresponding to a data supplied from a timing controller **150'**, and supplies the generated data signal to data lines D11 to D1*m* formed in the upper unit **132**. Here, the first data driver **120'** supplies the left and right data signals of the first image during the first period T1' and supplies the left and right data signals of the second image during the second period T2'.

[0100] A second data driver **120"** generates a data signal, corresponding to a data supplied from the timing controller **150'**, and supplies the generated data to data lines D21 to D2*m* formed in the lower unit **134**. Here, the second data driver **120"** supplies the left and right data signals of the first image during the first period T1' and supplies the left and right data signals of the second image during the second period T2'.

[0101] The display unit **130'** receives first and second power sources ELVDD and ELVSS supplied from an outside thereof, and supplies the received first and second power sources ELVDD and ELVSS to each pixel **140**. Each pixel **140** implements a predetermined gray scale while supplying current of an organic light emitting diode (emitting light), corresponding to a data signal, or not supplying the current (not emitting light).

[0102] The timing controller **150'** controls the scan drivers **110'** and **110"** and the data drivers **120'** and **120"**, corresponding to a synchronization signal supplied from an outside thereof.

[0103] A first power generation unit **160'** supplies the voltage of the first power source ELVDD, at which the pixels **140** can emit light during the first and second periods.

[0104] A second power generation unit **170'** controls the voltage of the second power source ELVSS so that the pixels **140** do not emit light during some frames of the first and second periods.

[0105] FIG. **7** is a diagram illustrating a driving method according to still another embodiment of the disclosed technology.

[0106] Referring to FIG. **7**, the first period T1' is configured with five frames **1**F to **5**F, and the second period T2' is configured to five frames **1**F' to **5**F'.

[0107] During a first frame **1**F of the first period T1', a scan signal is progressively supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . formed in the upper and lower units **132** and **134**, and the left data signal L1 of the first image is supplied to the data lines D11 to D1*m* and D21 to D2*m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. In this case, the pixels formed on the odd-numbered horizontal lines store the left data signal L1 of the first image or the black data signal, corresponding to the positions thereof. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the first frame **1**F.

[0108] During a second frame **2**F of the first period T1', a scan signal is progressively supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . , and the left data signal L1 of the first image is supplied to the data lines D11 to D1*m* and D21 to D2*m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. The second power source ELVSS is set to the low voltage during the second frame **2**F, and accordingly, the pixels **140** formed on the odd-numbered horizontal lines emit light, corresponding to the left data signal L1 of the first image during the second frame **2**F.

[0109] During a third frame **3**F of the first period T1', a scan signal is progressively supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . , and the right data signal R1 of the first image is supplied to the data lines D11 to D1*m* and D21 to D2*m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. Here, during the third frame **3**F, the pixels formed on the odd-numbered horizontal lines store the left or right data signal L1 or R1 of the first image, corresponding to the positions thereof. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the third frame **3**F.

[0110] During a fourth frame **4**F of the first period T1', a scan signal is progressively supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . , and the right data signal R1 of the first image is supplied to the data lines D11 to D1*m* and D21 to D2*m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. The second power source ELVSS is set to the low voltage during the fourth frame **4**F, and accordingly, the pixels **140** formed on the odd-numbered horizontal lines emit light, corresponding to the right data signal R1 of the first image during the fourth frame **4**F.

[0111] During a fifth frame **5**F of the first period T1', a scan signal is progressively supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . , and the black data signal is supplied to the data lines D11 to D1*m* and D21 to D2*m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. Then, the black data signal is progressively supplied to the pixels **140** formed on the odd-numbered horizontal lines.

[0112] Meanwhile, light is supplied to the right side of the first glasses in the first and second frames **1**F and **2**F of the first period T1' and light is supplied to the right side of the first glasses in the third and fourth frames **3**F and **4**F of the first period T1'. Then, the viewer wearing the first glasses recognizes the first image as a 3D screen.

[0113] Additionally, in the disclosed technology, the pixels **140** emit light in only the second and fourth frames **2**F and **4**F among the consecutive five frames. Thus, the first image with a luminance lower than that to be implemented can be displayed. In the disclosed technology, in order to overcome such a disadvantage, the low voltage of the second power source ELVSS is controlled so that an image of a desired gray scale (luminance) can be implemented during the second and fourth frames **2**F and **4**F. In one exemplary implementation, the second power generation unit **170'** controls the low voltage of the second power source ELVSS to have a voltage lower than a generally supplied voltage, so that the desired luminance can be implemented corresponding to a data.

[0114] Meanwhile, the pixels **140** of the disclosed technology are driven using the digital driving method. Accordingly, each frame **1**F to **5**F can be divided into a plurality of subfields so that a gray scale is implemented. In this case, a scan signal is supplied to the odd-numbered scan lines S11, S13, . . . and S21, S23, . . . every subfield, and a data signal corresponding to the scan signal is supplied. Actually, the organic light emitting diode display of the disclosed technology can be driven using various forms of digital driving methods currently known in the art.

[0115] During a first frame **1**F' of the second period T2', a scan signal is progressively supplied to the even-numbered scan lines S12, S14, . . . and S22, S24, . . . formed in the upper and lower units **132** and **134**, and the left data signal L**2** of the second image is supplied to the data lines D**11** to D**1***m* and D**21** to D**2***m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. In this case, the pixels **140** formed on the even-numbered horizontal lines store the left data signal L**2** of the second image or the black data signal, corresponding to the positions thereof. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the first frame **1**F'.

[0116] During a second frame **2**F' of the second period T**2**', a scan signal is progressively supplied to the even-numbered scan lines S**12**, S**14**, . . . and S**22**, S**24**, . . . , and the left data signal L**2** of the second image is supplied to the data lines D**11** to D**1***m* and D**21** to D**2***m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. The second power source ELVSS is set to the low voltage during the second frame **2**F'. Accordingly, the pixels **140** formed on the even-numbered horizontal lines emit light, corresponding to the left data signal L**2** of the second image during the second frame **2**F'.

[0117] During a third frame **3**F' of the second period T**2**', a scan signal is progressively supplied to the even-numbered scan lines S**12**, S**14**, . . . and S**22**, S**24**, . . . , and the right data signal R**2** of the second image is supplied to the data lines D**11** to D**1***m* and D**21** to D**2***m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. Here, during the third frame **3**F', the pixels formed on the even-numbered horizontal lines store the left or right data signal L**2** or R**2** of the second image, corresponding to the positions thereof. Thus, the second power source ELVSS is set to the high voltage so that an undesired image is not displayed during the third frame **3**F'.

[0118] During a fourth frame **4**F' of the second period T**2**', a scan signal is progressively supplied to the even-numbered scan lines S**12**, S**14**, . . . and S**22**, S**24**, . . . , and the right data signal R**2** of the second image is supplied to the data lines D**11** to D**1***m* and D**21** to D**2***m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. The second power source ELVSS is set to the low voltage during the fourth frame **4**F'. Accordingly, the pixels **140** formed on the even-numbered horizontal lines emit light, corresponding to the right data signal R**2** of the second image during the fourth frame **4**F'.

[0119] During a fifth frame **5**F' of the second period T**2**', a scan signal is progressively supplied to the even-numbered scan lines S**12**, S**14**, . . . and S**22**, S**24**, . . . , and the black data signal is supplied to the data liens D**11** to D**1***m* and D**21** to D**2***m* formed in the upper and lower units **132** and **134**, corresponding to the scan signal. Then, the black data signal is progressively supplied to the pixels **140** formed on the even-numbered horizontal lines.

[0120] Meanwhile, light is supplied to the left side of the second glasses in the first and second frames **1**F' and **2**F' of the second period T**2**', and light is supplied to the right side of the second glasses in the third and fourth frames **3**F' and **4**F' of the second period T**2**'. Then, the viewer wearing the second glasses recognizes the second image as a 3D screen.

[0121] Additionally, in the disclosed technology, the pixels **140** emit light in only the second and fourth frames **2**F' and **4**F' among the consecutive five frames. Thus, the second image with a luminance lower than that to be implemented can be displayed. In the disclosed technology, in order to overcome such a disadvantage, the second power generation unit **170'** controls the low voltage of the second power source ELVSS so that an image of a desired gray scale (luminance) can be implemented during the second and fourth frames **2**F' and **4**F'. In one exemplary implementation, the second power generation unit **170'** controls the low voltage of the second power source ELVSS to have a voltage lower than a generally supplied voltage, so that the desired luminance can be implemented corresponding to a data. Meanwhile, the pixels **140** of the disclosed technology are driven using the digital driving method, and accordingly, each frame **1**F' to **5**F' can be divided into a plurality of subfields so that a gray scale is implemented.

[0122] FIG. **8** is a diagram illustrating a driving method according to still another embodiment of the disclosed technology. In FIG. **8**, detailed descriptions of portions identical to those of FIG. **7** will be omitted.

[0123] Referring to FIG. **8**, in this embodiment, the voltage of the first power source ELVDD is controlled. Specifically, the first power generation unit **160'** supplies a first power source ELVDD of the third voltage V**3** during the first frame **1**F or **1**F', the third frame **3**F or **3**F' and the fifth frame **5**F or **5**F', in which the pixels **140** are set in the non-emission state, and supplies a first power source ELVDD of the fourth voltage V**4** higher than the third voltage V**3** during the second frame **2**F or **2**F' and the fourth frame **4**F or **4**F', in which the pixels **140** are set in the emission state.

[0124] Here, the third voltage V**3** is set as a voltage at which the pixels **140** can generally emit light in the digital driving method. Thus, the pixels **140** can stably store the voltage of a desired data signal during the first frame **1**F or **1**F', the third frame **3**F or **3**F' and the fifth frame **5**F or **5**F', in which the pixels **140** are set in the non-emission state. The fourth voltage V**4** is set as a voltage higher than the third voltage V**3**.

[0125] If the fourth voltage V**4** higher than the third voltage V**3** is supplied during the second frame **2**F or **2**F' and the fourth frame **4**F or **4**F', in which the pixels **140** emit light, the luminance of the pixels **140** is improved.

[0126] In the disclosed technology, the organic light emitting diode OLED can generate red, green and blue light, corresponding to the amount of current supplied from the driving transistor, or can generate white light, corresponding to the amount of the current supplied from the driving transistor. In a case where the organic light emitting diode OLED generates white light, a color image is implemented using a separate color filter or the like.

[0127] By way of summation and review, an organic light emitting diode display includes a plurality of pixels arranged in a matrix form at intersection portions of data lines, scan lines and power lines. Each pixel generally includes an organic light emitting diode, two or more transistors including a driving transistor, and one or more capacitors.

[0128] In the organic light emitting diode display, in order to implement a 3D image, a left image is displayed in a first frame among consecutive four frames, and a right image is displayed in a third frame among the consecutive four frames. An image of black is displayed in second and fourth frames in which the left and right images are mixed.

[0129] In case of shutter glasses, light is supplied to the left side of the glasses during the first frame, and light is supplied to the right side of the glasses. In this case, a viewer wearing the glasses recognizes an image supplied through the glasses as a 3D screen.

[0130] However, a high driving frequency is required to implement a 3D image. Accordingly, a voltage corresponding to a data signal cannot be sufficiently charged in the pixel.

Particularly, in a dual view method in which different viewers watches two different 3D images displayed in a display unit, a sufficient voltage is not charged in the pixel, and therefore, a desired image is not displayed.

[0131] In the organic light emitting diode display and the driving method thereof according to the disclosed technology, a scan signal is supplied the odd-numbered or even-numbered scan lines during frames, and hence it is possible to sufficiently secure a charging time of the pixels. Further, the luminance of the pixels can be improved by controlling the voltage(s) of the first power source and/or the second power source. Accordingly, it is possible to display an image of a desired gray scale.

[0132] Exemplary embodiments have been disclosed herein, and although specific terms are employed, they are used and are to be interpreted in a generic and descriptive sense only and not for purpose of limitation. In some instances, as would be apparent to one of ordinary skill in the art as of the filing of the present application, features, characteristics, and/or elements described in connection with a particular embodiment can be used singly or in combination with features, characteristics, and/or elements described in connection with other embodiments unless otherwise specifically indicated. Accordingly, it will be understood by those of skill in the art that various changes in form and details can be made without departing from the spirit and scope of the disclosed technology as set forth in the following claims.

What is claimed is:

1. An organic light emitting diode (OLED) display, comprising:
- a plurality of pixels;
- a scan driver configured to supply a first scan signal to odd-numbered scan lines during a first period via a plurality of frames and to supply a second scan signal to even-numbered scan lines during a second period via a plurality of frames;
- first and second power generation units configured to control the voltages of first and second power sources, respectively, so that the pixels are set in a non-emission state during at least one frame of the first and second periods; and
- a data driver configured to supply a plurality of data signals to a plurality of data lines synchronous to the first and second scan signal, wherein current from the first power source to the second power source via an OLED of each of the pixels is set at least partially based on the data signal.

2. The OLED display of claim **1**, wherein each of the first and second periods includes five frames.

3. The OLED display of claim **2**, wherein the data driver is further configured to:
- supply a left data signal of a first image during first and second frames of the first period,
- supply a right data signal of the first image during third and fourth frames of the first period, and
- supply a black data signal during a fifth frame of the first period, and
- wherein the data driver is further configured to:
- supply a left data signal of a second image during first and second frames of the second period,
- supply a right data signal of the second image during third and fourth frames of the second period, and
- supply a black data signal during a fifth frame of the second period.

4. The OLED display of claim **3**, wherein light is supplied to the left side of first glasses during the first and second frames of the first period, and wherein light is supplied to the right side of the first glasses during the third and fourth frames of the first period.

5. The OLED display of claim **3**, wherein light is supplied to the left side of second glasses during the first and second frames of the first period, and wherein light is supplied to the right side of the second glasses during the third and fourth frames of the second period.

6. The OLED display of claim **3**, wherein the second power generation unit sets the second power source to have a high voltage so that the pixels do not emit light during the first, third and fifth frames of the first and second periods, and wherein the second power generation unit sets the second power source to have a low voltage so that the pixels emit light during the second and fourth frames of the first and second periods.

7. The OLED display of claim **6**, wherein the second power generation unit sets the second power source to have the low voltage so that light of a desired luminance is generated to correspond to data of the second and fourth frames of the first and second periods.

8. The OLED display of claim **6**,
- wherein the first power generation unit is configured to generate the first power source,
- wherein the first power generation unit sets the first power source to have a third voltage so that the pixels emit light during the first, third and fifth frames of the first and second periods, and
- wherein the first power generation unit supplies a fourth voltage higher than the third voltage during the second and fourth frames of the first and second periods.

9. The OLED display of claim **1**, wherein each frame of the first and second periods includes a plurality of subfields, and
- wherein the scan driver supplies the first or second scan signal to the odd-numbered or even-numbered scan lines during every subfield, respectively.

10. The OLED display of claim **1**, wherein the data driver supplies a first data signal when the pixels emit light, the first data signal corresponding to the scan signal, and wherein the data driver supplies a second data signal when the pixels do not emit light.

11. The OLED display of claim **1**, wherein the first and second periods alternate with each other.

12. The OLED display of claim **1**, wherein the display unit includes upper and lower units,
- wherein the scan driver includes:
  - a first scan driver for driving scan lines formed in the upper unit, and
  - a second scan driver for driving scan lines formed in the lower unit, and
- wherein the data driver includes:
  - a first data driver for driving data lines formed in the upper unit, and
  - a second driver for driving data lines formed in the lower unit.

13. The OLED display of claim **12**, wherein the first and second scan drivers progressively supply the first or second scan signal to the odd-numbered or even-numbered scan lines, respectively.

14. A method of driving an organic light emitting diode (OLED) display, the method comprising:

supplying a first scan signal to odd-numbered scan lines via a plurality of frames during a first period;

supplying a first left or right data signal of a first image synchronized with the first scan signal;

supplying a second scan signal to even-numbered scan lines via a plurality of frames during a second period; and

supplying a second left or right data signal of a second image synchronized with the a second scan signal.

15. The method of claim **14**, wherein the first and second periods alternate with each other.

16. The method of claim **14**, wherein each of the first and second periods includes five frames.

17. The method of claim **14**, wherein supplying the first left or right data signal comprises:

supplying the left data signal of the first image during first and second frames of the first period;

supplying the right data signal of the first image during third and fourth frames of the first period; and

supplying a first black data signal during a fifth frame of the first period, and

wherein supplying the second left or right data signal comprises:

supplying the left data signal of the second image during first and second frames of the second period;

supplying the right data signal of the second image during third and fourth frames of the second period; and

supplying a second black data signal during a fifth frame of the second period.

18. The method of claim **17** further comprising setting pixels of the OLED display in a non-emission state during the first, third and fifth frames of the first and second periods.

19. The method of claim **17** further comprising controlling, via pixels of the OLED display, whether current flowing from a first power source to a second power source via an OLED is supplied,

wherein the second power source is configured to be a high voltage during the first, third and fifth frames of the first and second periods.

20. The method of claim **19**, wherein the first power source is set to a third voltage so that the pixels emit light during the first, third and fifth frames of the first and second periods, and

wherein the first power source is set to a fourth voltage higher than the third voltage during the second and fourth frames of the first and second periods.

21. The method of claim **17**, wherein light is supplied to the left side of first glasses during the first and second frames of the first period, and wherein light is supplied to the right side of the first glasses during the third and fourth frames of the first period.

22. The method of claim **17**, wherein light is supplied to the left side of second glasses during the first and second frames of the first period, and wherein light is supplied to the right side of the second glasses during the third and fourth frames of the second period.

23. The method of claim **14**, wherein each frame of the first and second periods includes a plurality of subfields.

24. The method of claim **14**, wherein the left and right data signals supplied during the first and second periods control the emission or non-emission of the pixels.

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专利名称(译)	有机发光二极管显示器及其驱动方法		
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摘要(译)

公开了一种有机发光二极管（OLED）显示器及其驱动方法。一个发明方面包括多个像素，扫描驱动器，第一和第二发电单元以及数据驱动器。扫描驱动器在第一时段期间将第一扫描信号提供给奇数扫描线，并且在第二时段期间将第二扫描信号提供给偶数扫描线。第一和第二发电单元在第一和第二时段的至少一帧期间将像素设置为非发光状态。数据驱动器将数据信号提供给与第一和第二扫描信号同步的数据线。