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Sony transparent smartphone
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Sony transparent smartphone

The present disclosure relates to a display device having a display section including two types of display panels, and an electronic apparatus with such a display device.

Meanwhile, in general, display devices are expected to improve convenience of users. Therefore, suggestion of a technique for improving convenience of users is desired. Accordingly, it is desirable to provide a display device and an electronic apparatus that are capable of improving convenience of a user.

A display device according to an embodiment of the present disclosure includes a display section having a first display surface and a second display surface facing each other. This display section includes a first display panel disposed on the first display surface side, and including a plurality of light emitting elements, and a second display panel disposed on the second display surface side, and including a plurality of light control elements each performing light control for control of transmission or reflection of incident light performing reflective image display utilizing reflection of the incident light.

An electronic apparatus according to an embodiment of the present disclosure includes the display device according to the above-described embodiment of the present disclosure. In the display device and the electronic apparatus of the embodiments of the present disclosure, image display on both of the first and second display surfaces facing each other is implemented, by utilizing the first and second display panels. In addition, since the first display panel is configured to include the above-described light emitting elements and the second display panel is configured to include the above-described light control elements, image display in which the device functions on both sides complement each other is implemented.

According to the display device and the electronic apparatus of the embodiments of the present disclosure, the display section having the above-described first and second display panels is provided, and therefore, image display on the two display surfaces facing each other is implemented by allowing the device functions of the respective display panels to complement each other. Therefore, it is possible to improve convenience of a user. It is to be noted that, an effect described herein is not necessarily limitative, and may be any of effects described in the present disclosure.

Sony patent claims

1. An electronic apparatus, comprising: a first display panel including a plurality of first pixels, the first pixels including a plurality of light emitting elements, respectively; a second display panel including a plurality of second pixels, the second pixels including a plurality of light control elements; and a display control section configured to individually control image display of each of the first display panel and the second display panel, wherein the display control section includes: a first display driving circuit configured to drive the first display panel; a second display driving circuit configured to drive the second display panel; and a control circuit configured to operate the first display driving circuit and the second display driving circuit, wherein the first display panel further includes a first driving substrate, at least one of the light emitting element includes a first electrode, a second electrode and an organic light emission layer, the first driving substrate, the first electrode, the organic light emission layer and the second electrode are stacked in this order, at least the second electrode has a transparency such that light emitted from the organic light emission layer is extracted through the second electrode, and the second electrode is disposed common to the plurality of the light emitting elements of the first pixels, wherein the second display panel further includes a second driving substrate, at least one of the light control elements includes a pixel electrode, a common electrode and a liquid crystal material, the second driving substrate, the pixel electrode, the liquid crystal material and the common electrode are stacked in this order, and each of the common electrode and the pixel electrode has a transparency such that each of the light control elements controls a transmission of light passing through the second display panel, and the second electrode is disposed common to the plurality of the light emitting elements of the first pixels.
2. The electronic apparatus according to claim 1, further comprising a first sensor operably coupled to the display control section and configured to detect a posture of the electronic apparatus, wherein the display control section is configured to control the image display of each of the first display panel and the second display panel in accordance with the posture detected by the first sensor.
3. The electronic apparatus according to claim 1, further comprising a second sensor operably coupled to the display control section and configured to detect an environmental luminance of the electronic apparatus, wherein the display control section is configured to control the image display of each of the first display panel and the second display panel in accordance with the environmental luminance detected by the second sensor.
4. The electronic apparatus according to claim 2, wherein the display control section is configured to: (i) display a specific image on the first display panel, and (ii) change a display state of the second display panel to display the specific image in accordance with a change of the posture detected by the first sensor.
5. The electronic apparatus according to claim 1, wherein the first display panel faces a first direction and the second display panel faces a second direction that is different from the first direction.
6. The electronic apparatus according to claim 5, wherein the first direction is an opposite direction of the second direction with respect to the electronic apparatus.
7. The electronic apparatus according to claim 6, wherein a back surface of the first display panel is disposed on a back surface of the second display panel.
8. The electronic apparatus according to claim 7, wherein the light control elements are configured to control the transmission of light emitted from the organic light emission layer and passing through the second display panel.
9. The electronic apparatus according to claim 1, wherein the first electrode has a transparency such that light emitted from the organic light emission layer is extracted through the first electrode and the second electrode.

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