

spot. In particular, the display device having the light emitting element in which the layer containing the organic compound material serves as the light emitting layer can handle moving images better than a liquid crystal display, and provides a display device with a wide field of vision.

[0060] Further, by using the ceiling of the vehicle as the base and curving and attaching the display device having the light emitting element in which the layer containing the organic compound material serves as the light emitting layer along the curved surface of the ceiling, it becomes possible to perform an image display and interior lighting. Further, in an automobile, for example, if the flexible display device of the present invention is attached to the portions between the windows and then a camera corresponding to each of the display devices and capable of capturing the outside view is mounted onto the exterior of the car and the displays and the camera are attached to each other, then the people inside the vehicle can enjoy the scenery of the outside as if in a convertible car with the roof down, even though they are inside the vehicle. Further, in a train or electric train, for example, if the flexible display device of the present invention is attached to a window and/or wall, then advertisements and television images can be displayed without reducing the open space within the train. More particularly, the display device having the light emitting element in which the layer containing the organic compound material serves as the light emitting layer provides a display device offering a wider field of vision than a liquid crystal display device.

[0061] In the above-mentioned vehicle, if the radius of curvature of the mounted display device is from 50 cm to 200 cm, then the thin film transistors and the light emitting element in which the layer containing the organic compound material serves as the light emitting layer can be driven without problems. Note that, it is preferable that the channel length directions of the plural thin film transistors that are provided are all arranged in the same direction, and the above-mentioned channel length direction is different from the direction in which the above-mentioned base is curved.

BRIEF DESCRIPTION OF THE DRAWINGS

[0062] In the accompanying drawings:

[0063] **FIGS. 1A to 1C** are diagrams of steps illustrating an embodiment mode of the present invention;

[0064] **FIG. 2** is a diagram indicating directional orientations in an embodiment mode of the present invention;

[0065] **FIG. 3** is a layout diagram showing a configuration of a laser radiation device, according to Embodiment 1 of the present invention;

[0066] **FIG. 4** is another layout diagram showing a configuration of a laser radiation device, according to Embodiment 1 of the present invention;

[0067] **FIG. 5** is a diagram for explaining a construction of a substrate provided with a TFT, and the relationship between an arrangement of a semiconductor area constituting the TFT and a scan direction of a laser beam;

[0068] **FIGS. 6A to 6D** are diagrams for explaining the laser beam scan direction along a semiconductor film, and steps of manufacturing a top gate-type TFT;

[0069] **FIGS. 7A to 7D** are diagrams for explaining the laser beam scan direction along the semiconductor film, and steps of manufacturing a bottom gate-type TFT;

[0070] **FIGS. 8A to 8G** are diagrams of steps illustrating Embodiment 3 of the present invention;

[0071] **FIG. 9** is a diagram illustrating V-I characteristics of an n channel-type TFT after peeling;

[0072] **FIG. 10** is a diagram illustrating V-I characteristics of a p channel-type TFT after peeling;

[0073] **FIGS. 11A to 11F** are diagrams of steps illustrating Embodiment 4 of the present invention;

[0074] **FIGS. 12A and 12B** are external views of a curved semiconductor device having a light emitting element in which a layer containing organic material serves as the light emitting layer, according to Embodiment 4 of the present invention;

[0075] **FIG. 13** is a diagram showing the vicinity in front of a driver's seat in a car, according to Embodiment 5 of the present invention;

[0076] **FIG. 14** is a diagram showing the rear portion behind the car, according to Embodiment 5 of the present invention; and

[0077] **FIGS. 15A to 15D** are diagrams of steps illustrating Embodiment 6 of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0078] An embodiment mode of the present invention will be described below.

[0079] Hereinafter, a typical manufacturing order according to the present invention will be briefly described using **FIGS. 1A to 1C** and **2**.

[0080] In **FIG. 1A**, reference numeral **10** denotes a substrate, **11a** denotes a layer to be peeled, **12** denotes a pixel portion provided to the layer to be peeled, **13a** denotes a semiconductor layer provided in the pixel portion, **13b** denotes a channel length direction of the semiconductor layer **13a**, **14a** denotes a laser light irradiation area, and **14b** denotes a laser light irradiation direction.

[0081] **FIG. 1A** shows a manufacturing step indicating the course of a completion of the layer to be peeled and is a schematic view indicating processing for irradiating laser light to the semiconductor layer. Laser crystallization and laser annealing can be conducted by the laser light irradiation processing. An oscillation mode may be either continuous oscillation or pulse oscillation. In order to continuously produce crystal growth with a molten state of the semiconductor film, it is desirable that a continuous oscillation mode is selected.

[0082] In **FIG. 1A**, all channel length directions of a large number of semiconductor layers included in the layer to be peeled are aligned with the same direction. In addition, assume that the laser light irradiation direction, that is, a scanning direction is the same direction as the channel length directions. Thus, when the crystal growth direction is aligned with the channel length direction, the field effect mobility can be substantially increased. Note that the example in which linear laser light irradiation is conducted is shown in **FIG. 1A**. However, the present invention is not particularly limited to this. In addition, here, the laser light