

shape of the laser beam may be linear or rectangular. In the present embodiment, the laser radiation device indicated in Embodiment 1 is used. By using the laser radiation device indicated in Embodiment 1, it is possible to radiate the laser beam across the entirety of a large surface area with good throughput. Further, the laser radiation device indicated in Embodiment 1 can be used not only for crystallizing or peeling, but also for performing various laser annealing.

[0223] When the above-mentioned laser light causes the release of the hydrogen contained in the separation layer 601, gaps are created and the layer to be peeled 602 and the substrate 600 separate from each other. (FIG. 15C). By using the laser radiation device indicated in Embodiment 1, it becomes possible to peel a layer to be peeled having a large area, across the entire surface thereof with good yield.

[0224] The post-peeling state is shown in FIG. 15D. Further, the example shown here assumes that the mechanical strength of the layer to be peeled 602 is sufficient. However, in the case where the mechanical strength of the layer to be peeled 602 is insufficient, the peeling should be performed after applying a support (not shown in the diagram) for anchoring the layer to be peeled 602.

[0225] Further, the peeled layer after peeling can be curved in a certain direction. It also goes without saying that the peeled layer can be applied and transferred onto an object having a curved surface.

[0226] In the present embodiment as well, the direction of the laser light radiation (i.e., scan direction) and the directions of the channel length of all the semiconductor layers provided to the layer to be peeled are facing in the same direction, and this direction is made perpendicular to the direction of the curvature. Accordingly, the display having the curved surface can be realized.

[0227] Further, the configuration of the present embodiment may be combined freely with Embodiments 1 through 5.

[0228] Note that, in the case where the present embodiment is combined with Embodiment 1, the separation layer 601 of the present embodiment may be used instead of the separation layer 409 of Embodiment 1, and the laser may be radiated from the back side to perform the peeling.

[0229] Similarly, in the case where the present embodiment is combined with Embodiment 2, the separation layer 601 of the present embodiment may be used instead of the separation layer 509 of Embodiment 2, and the laser may be radiated from the back side to perform the peeling.

[0230] According to the present invention, crystallization is performed by radiating a laser beam across the entire surface of a substrate having a broad surface area while directing it at the location of a semiconductor region which forms the TFTs, whereby a crystalline semiconductor layer having a large grain size can be formed and also improvement of the TFT characteristics is attained to realize a display having a curved surface.

[0231] According to the present invention, a display having a curved surface is realized. Thus, in the case where an imaging or measuring display is to be furnished in a limited space such as at the driver's seat in an automobile or aircraft or other such vehicle, the display can be mounted to various locations that have curved surfaces (such as the window, the

ceiling, the door, the dashboard, etc.), thereby reducing the space occupied by the display.

What is claimed is:

1. A vehicle comprising a display device having a thin film transistor and a light₁₃ emitting element in which a layer containing an organic compound serves as a light emitting₁₃ layer, which is mounted as a measuring instrument or as an illumination device onto a base having a curved surface that is curved in a convex or a concave shape.

2. A vehicle according to claim 1, wherein the radius of curvature of the curved surface is 50 cm to 200 cm.

3. A display device comprising a thin film transistor and a light emitting element in which a layer containing an organic compound serves as a light emitting layer, which are mounted onto a base having a surface that is curved in a convex or a concave shape.

4. A method of manufacturing a semiconductor device, comprising:

forming onto a first substrate a layer to be peeled that contains a semiconductor element;

adhering a second substrate to the layer to be peeled with a first adhesive, and sandwiching the layer to be peeled between the first substrate and the second substrate;

separating the layer to be peeled and the first substrate;

adhering a third substrate to the layer to be peeled with a second adhesive, and sandwiching the layer to be peeled between the second substrate and the third substrate;

separating the layer to be peeled and the second substrate, and forming the layer to be peeled, for which the second adhesive and the third substrate serve as a support; and

curving the third substrate.

5. A method according to claim 4, wherein, in the separating the layer to be peeled and the second substrate, the first adhesive is dissolved in a solvent and removed to separate the layer to be peeled and the second substrate.

6. A method according to claim 4, wherein the first adhesive is a photosensitive adhesive, and in separating the layer to be peeled and the second substrate, light is irradiated to separate the layer to be peeled and the second substrate.

7. A method according to claim 4, wherein the first substrate and the second substrate are materials which are more rigid than the third substrate.

8. A method according to claim 4, wherein the third substrate is a substrate which is bendable.

9. A method of manufacturing a semiconductor device, comprising:

forming onto a first substrate a layer to be peeled that contains one of a semiconductor element and a light emitting element in which a layer containing an organic compound serves as a light emitting layer;

adhering a second substrate to the layer to be peeled with a first adhesive, and sandwiching the layer to be peeled between the first substrate and the second substrate to which a film is applied;

separating the layer to be peeled and the first substrate;