

more, it is fine to coat the sealing agents over the support **423** side or the substrate **411** side. In the embodiment, a UV cure sealing agent is used for the sealing agent **422**. In this case, ultraviolet rays are irradiated, whereby the sealing agent **422** is cured. The direction of irradiating the ultraviolet rays may be from the support **423** or may be from the substrate **411**. However, attention is needed to use a light shielding mask for the portions to be damaged by the ultraviolet rays, or to adjust the energy of the ultraviolet rays to cure only the sealing agent, whereby not damaging the other portions.

[0089] After that, liquid crystals **424** are filled from the filling port, and then the filling port is fully sealed with an end-sealing material (not shown). As the composition of the end-sealing material, any end-sealing materials are fine such as the epoxy type, acrylate type, and silicon type.

[0090] Subsequently, the substrate **411** disposed with the first material layer **412** is peeled from the area where the adhesion has been partially reduced, and it is peeled by a physical unit in the direction of an arrow shown in FIG. 4C. The second material layer **414** has the compressive stress and the first material layer **412** has the tensile stress, and thus they can be peeled with a relatively small force (for example, human hands, wind pressure blown from a nozzle, and ultrasonic waves).

[0091] In this manner, the peeled layer **414** formed over the second material layer **413** can be separated from the substrate **411**. At this stage, the support **423** returns into the original shape by the restoring force, and in accordance with this, the layers bonded to the support **423** are curved as well (FIG. 4D).

[0092] Then, as shown in FIG. 4E, a transfer object **451** is bonded to the second material layer **413** with an adhesive **452**. As the adhesive **452**, various adhesives of the reactive curing type, thermosetting type, photo-curing type, and anaerobic type are used. In this embodiment, a UV cure adhesive is used for the adhesive **452**. It is fine to irradiate ultraviolet rays from either side, from the transfer object **451** or the support **423**. However, attention is needed to use a light shielding mask for the portions not to be irradiated by the ultraviolet rays, or to adjust the energy of the ultraviolet rays to cure only the adhesive, whereby not damaging the other portions.

[0093] According to the steps described above, the liquid crystal display device having the peeled layer **414** over the second adhesive **452** and the transfer object **451** can be fabricated. Such the semiconductor device is characterized by having a curvature of 50 to 200 cm with no external force applied. Moreover, the oxide layer **413** to be the second material layer is disposed between the adhesive **452** and the peeled layer **414**. The liquid crystal display device thus obtained has the second material layer **413** deposited by sputtering and has a slight amount of a rare gas element contained in the second material layer **413**. The overall device can be formed flexible as well.

[0094] Besides, in the embodiment, the reflective liquid crystal display device is considered, and thus the light emission can be obtained from the support **423** side. To this end, the support **423** needs to be transparent.

[0095] [Embodiment 3]

[0096] In the embodiment, FIG. 5 shows an apparatus for fabricating a light emitting device having an organic light

emitting diode. In addition, the apparatus shown in the embodiment allows fabricating the light emitting device shown in the embodiment 1.

[0097] FIG. 5 shows an apparatus for depositing a light emitting layer (EL layer) of the organic light emitting diode by the dry deposition method of low weight molecular organic compounds. The apparatus is mainly configured of transport chambers for transferring substrates, delivery chambers for delivery, deposition chambers for depositing various thin films, and an encapsulation chamber for encapsulation. Each chamber is equipped with an exhaust system for achieving necessary vacuum degrees or a system for generating a gas atmosphere such as N₂. In addition, the separate chambers are connected by gate valves. The substrates are transferred by transfer robots.

[0098] First, a substrate **501c** necessary to fabricate an organic light emitting diode, which has been formed with a pixel portion, a drive circuit part, wiring lines, electrodes and a protection film beforehand, is introduced into a delivery chamber **500** from outside. Typically, TFTs are used for the pixel portion and the drive circuit part.

[0099] The substrate **501c** introduced into the delivery chamber **500** is carried to a transport chamber **501a** by a transfer robot **501b** and further carried to a pretreatment chamber **502**. Typically, the substrate **501c** is heated or undergoes pretreatment such as O₂ plasma processing in the pretreatment chamber **502**. The pretreatment is intended to enhance various characteristics of the organic light emitting diode.

[0100] The substrate after the pretreatment is carried to a transport chamber **504** through a delivery chamber **503**. The transport chamber **504** is also installed with a transfer robot serving to transfer substrates to the separate chambers connected to the transport chamber **504**. The transport chamber **504** is connected to deposition chambers for depositing organic layers. In consideration of fabricating a display device having an organic light emitting diode of full color display, provided are deposition chambers **506R**, **506G** and **506B** for forming light emitting layers of red, green and blue, and a deposition chamber **505** for depositing common layers for each color, that is, a carrier transport layer and a carrier injection layer. In these deposition chambers, vacuum evaporation is used in general. To obtain full color emission, it is acceptable to use a shadow mask for separately applying colors for evaporation so as to arrange the light emitting layers expressing the red, green and blue colors in stripes, mosaics or delta shapes.

[0101] The substrate after the deposition of the organic layers is carried to a transport chamber **508** through a delivery chamber **507**. The transport chamber **508** is also installed with a transfer robot for serving to transfer substrates to each chamber connected to the transport chamber **508**. The transport chamber **508** is connected to deposition chambers for forming a backside electrode and protection films. In deposition chambers **509** and **510**, metals (such as AlLi alloy or MgAg alloy) to be electrodes are deposited by vacuum evaporation and electron beam evaporation. In a deposition chamber **511**, a transparent conductive film (such as ITO or IZO) necessary to obtain light emission from the top face of the substrate is deposited by sputtering or chemical vapor deposition (CVD) in general. In a deposition