present invention. The basic OLED cell structure **450** consists of a stack of thin organic layers **453** sandwiched between a transparent anode **452** and a metallic cathode **454**. The OLED cell structure **450** may be used to form a pixel in a thin light-emitting interface display of the present invention.

[0116] The organic layers **453** may comprise a hole injection layer, a hole-transport layer and an electron-transport layer. The structure of the organic layers **453** and the choice of the anode **452** and cathode **454** are selected to maximize the recombination process in the emissive layer, thus, maximizing the light output from the OLED device. When an appropriate voltage is applied, such as via leads **455** and **456**, the injected negative and positive charges recombine in the emissive layer to produce light (electro-luminescence). A voltage range of 2-10 Volts Direct Current is a typical voltage range.

[0117] In one embodiment, an OLEDs may be fabricated on a transparent substrate **451**, such as glass, on which the anode **452**, such is indium-tin-oxide (ITO), is deposited. ITO is both conductive and transparent. Then, one or more organic layer may be coated to the ITO by thermal evaporation in the case of small organic dye molecules or spin coating in the case of polymers. In addition, to the luminescent layer, other organic layers may be used to enhance injection and transport of electrons and/or holes. The total thickness of the organic layers may be on the order of 100 nm. A metal cathode **454** may be evaporated on top of the organic layers **453**. The method cathode may be formed from magnesium-silver alloy, lithium-aluminum or calcium. The cathode material may be selected for their low work functions in order that they provide efficient injection of electrons. The two electrodes, **452** and **454**, may add about 200 nm to the total thickness of the device **450**. Therefore, the overall thickness of the structure is mostly due to the thickness of the substrate **451**.

[0118] The total thickness of a display manufactured with a matrix of OLED elements may be less than a 1 mm thick when a plastic substrate **451** (e.g., 0.18 mm) is employed and less than 2 mm thick when a glass substrate is used (e.g. 1.8 mm). The substrate **451** may be different than the substrate **802** described with respect to **FIG. 1**A, which was an exterior surface of the gaming machine. In one embodiment, the substrate **451** may be used to form an exterior surface of the gaming machine. Therefore, substrates **451** and **802** may be the same. Eastman Kodak Corporation (Rochester, N.Y.) and Universal Display Corporation (Ewing, N.J.) manufacturer OLED displays that may be used with the present invention.

[0119] In one embodiment of the present invention, the substrate **451** may be a flexible material such as an optically-clear plastic film or a reflective metal foil. With a flexible substrate, the OLED display may be conformed onto another shape, such as an exterior surface of a gaming machine. In some cases, an OLED display may be laminated to the exterior surface of the gaming machine. For instance, OLED displays on flexible substrate may be bent or rolled up. Using a flexible substrate, the OLED display may be less breakable and more impact resistant as compared to a rigid substrate such as glass which may be important for use in a gaming environment such as a casino.

[0120] In one embodiment, the OLED cell structure **450** may be relatively transparent. Therefore, the cell **450** may emit light through the top layer (i.e., the cathode **454**) or through the bottom layer (i.e., the substrate **451**) or through the top and bottom. When the OLED cell structure is transparent and emits light through the top cathode layer **454** than it may be used on top of opaque substrates such as metal, foils and wood that may form the exterior surface of a gaming machine.

[0121] The OLED pixel elements in matrix may be controlled as a passive matrix or an active matrix. Passive matrix displays consist of an array of light elements or pixels deposited on a patterned substrate in a matrix of rows and columns. In an OLED display, each pixel is an organic light emitting diode, formed at the intersection of each column and row line. To illuminate any particular pixel in the passive matrix, electrical signals are applied to the row line and column line of the pix. The brightness of a pixel may be controlled by increasing or decreasing the current supplied to the pixel.

[0122] An external controller circuit may be used to provide the necessary input power, video data signal and multiplex switches for the passive OLED display. Data signal is generally supplied to the column lines and synchronized to the scanning of row lines. When a particular row is selected, the column and row data lines determine which pixels are lit. A video output on the display is displayed by scanning through all the row successively in a frame time. A frame time is typically on the order of 1/60 of a second.

[0123] In an active matrix OLED display like the passive matrix, the array of pixels is divided into a series of row and column lines, with each pixel formed at the intersection of a row and column lines. However, each pixel consists of OLED in series with a thin film transistor (TFT). The TFT is a switch that may be used to control the amount of current flowing through the OLED. In an active matrix OLED display, information is sent to the transistor in each pixel, indicating a brightness level for the pixel. The TFT stores this information and continuously controls the current flowing through the OLED it controls. This method tends to reduce the power level required to operate the display as compared to a passive matrix display. The TFT may be manufactured on Polysilicon and integrated into the display.

[0124] FIGS. **8**A-**8**D are block diagrams of sensor layers mounted to light-emitting layers for some embodiments of the present invention. In **FIG. 8**A, two light emitting layers are shown, a light emitting surface **105** and a light emitting surface **110** with a length to height ratio of about 4 to 3. The light emitting surfaces **105** and **110** may be comprised of a matrix of electro-luminescent diodes, such as OLEDs, as described of with respect to **FIG. 7**, electro-luminescent lamps in varying shapes as described with respect to **FIG. 6** and combinations thereof. The display surface is not limited to a rectangular shape. A sensor layer may use circular, ovular and irregularly shaped light emitting surfaces. In one embodiment of the present invention, a color OLED display screen with a 3.5 inch diagonal and a resolution of 320 pixels by 240 may be used with a touch sensor layer as a touch screen display.

[0125] In FIGS. **8B**-**8D**, three embodiments of different types of sensor layers, a resistive based touch screen (**FIG. 8B**), a capacitive based touch screen (**FIG. 8C**) and a surface acoustic wave touch screen (**FIG. 28**) are described. In **FIG.**