layer **375** is a nano-structured metallic oxide semiconducting film comprising Sb doped SnO_2. In an alternative embodiment, the semiconducting layer **375** includes an adsorbed redox promoter for assisting oxidation and reduction of electrochromic compounds adsorbed to the semiconducting layer **360** of the cathode **345**.

[0039] The electrochromic display **300** is assembled by placing the anode electrode **350** onto the cathode electrode **345**, ensuring that the two electrodes **345**, **350** do not touch. Preferably, a flexible seal is formed around the perimeter, ensuring that the electrodes **345**, **350** do not touch. Alternatively, physical separation of the cathode electrode **345** and the anode electrode **350** may be ensured by first depositing spacer beads **355** or other spacer structures as mentioned herein. The partitions **340** formed on the insulating layer **315** may also act to maintain a separation between the cathode electrode **345** and anode electrode **350**. It should be noted that the anode electrode **350** covers the entire area of the pixels D, E, F, and G and is not segmented into individual areas corresponding to the area of the pixels D, E, F, and G. An electrolyte **320** is provided between the electrodes **345**, **350**, preferably by back-filling in a vacuum chamber.

[0040] An electric potential selectively applied across the cathode electrode **345** and the anode electrode **350** of a given pixel D, E, F, or G induces the flow of electrons in the semiconducting layer **360** having adsorbed electrochromophores. Upon oxidation and reduction, the adsorbed electrochromophores change color. In this manner, an active matrix electrochromic display is realized.

[0041] The active matrix electrochromic skin **300** is described in greater detail, along with various other architectures for realizing an active matrix electrochromic skin, in commonly assigned U.S. patent application Ser. No. 11/536,316, filed Sep. 28, 2006, which is herein incorporated by reference.

[0042] Referring to FIG. **4**, the portable electronic device **100** displays a skin image file on its adaptable skin **130**. The adaptable skin **130** is preferably an adaptable electrochromic skin, and may either be a direct drive display as described above with reference to FIG. **2**, an active matrix display as described above with reference to FIG. **3**, or a passive matrix display. The displayed skin image is a decorative dot pattern, and is purely exemplary. When the adaptable skin **130** is integral with the portable electronic device **100**, a skin image file may be loaded into the portable electronic device **100** by means known to those of skill in the art, such as by a universal serial bus (USB) drive, flash memory storage, optical disk drive, and the like. When the adaptable skin **130** is contoured to fit the outer case of the portable electronic device **100**, an electrical interface (not shown) may be provided for loading skin images and controlling the adaptable skin's **130** segments or pixels.

[0043] Referring to FIG. **5**, a block diagram of the portable electronic device **500** in accordance with the present invention, as described with reference to FIGS. **1** and **4**, is shown. The portable electronic device **500** includes a processor **510**, memory **520**, display **530**, adaptable skin **540**, skin controller/driver **550**, and wireless communication functionality **560** including an antenna **570**. The processor **510** controls all functions of the adaptable skin **540**. The processor may also control other functions of the portable electronic device **500**. Memory **520** is configured to store skin image files and related skin image file parameters. Skin image file parameters include size of the image, resolution, cost, and the like. Display **530**, typically an LCD, is configured to display information to a user of the device **500**.

[0044] The adaptable skin **540** substantially covers the outer shell of the portable electronic device **500**. A skin controller/driver **550** drives and controls the adaptable skin **540**. For example, when the adaptable skin **540** contains a plurality of addressable pixels electrically coupled by an active matrix, the skin controller/driver **550** controls the active matrix. All functions relating to driving potentials, driving waveforms, feedback control, and the like are handled by the skin controller/driver **550**.

[0045] As previously mentioned, portable electronic device **500** is, purely by way of example and in no way meant to limit the scope of the present invention, a mobile telephone. Wireless communication functionality **560** is provided for interfacing with a wireless communication network. The wireless communication functionality **560** includes the necessary circuitry for interfacing with one or more wireless communication networks, including, but not limited to, 3rd Generation Partnership Project (3GPP) networks, IEEE 802.x networks, Bluetooth® enabled devices, Global System for Mobile Communications (GSM)/Enhanced Data Rates for GSM Evolution (EDGE) networks, and the like. Wireless communication functionality **560** may also include global positioning system (GPS) functionality for determining the portable electronic device's **500** location. Antenna **570** provides access to the air interface of the selected wireless communication network(s).

[0046] In another preferred embodiment, touch screen functionality is incorporated into the skin of a portable electronic device. Referring to FIG. **6**, a block diagram of a portable electronic device **600** having touch screen functionality is shown. The portable electronic device **600** includes a processor **610**, memory **620**, display **630**, adaptable skin **640**, skin controller/driver **650**, and wireless communication functionality **660** including an antenna **670**, similar to the portable electronic device **500** described with reference to FIG. **5**. A touch sensor **680** is provided for sensing pressure applied to selected regions of the skin of the portable electronic device **600**. Touch sensors are well known in the art, and may operate by way of resistive, capacitive, surface wave, infrared, strain gauge, optical imaging, dispersive imaging technology, and acoustic pulse recognition techniques. For example, in a resistive touch sensor, pressure applied to thin metallic electrically conductive and resistive layers cause a change in an electrical potential that is measured by a touch input sensor **690**. Piezoelectric materials, which provide a varying electric potential based on applied pressure, may be utilized in the touch sensor **580**. The touch input processor **690** processes input from the touch sensor **680** and provides touch measurements to the processor **610**, thereby allowing a user of the portable electronic device **600** to use the adaptable skin **640** as an input device. The touch sensor **680** may be incorporated into the adaptable skin **640**, or placed above or beneath the adaptable skin **640** based on the type of portable electronic device, its functionality, and designer preference.

[0047] As previously mentioned, the portable electronic device **600** is purely for illustrative purposes a mobile