illustrate that the layers can have some areas for capacitive sensing and some areas for contact switches. For example, in FIG. **2**, area **24** can overlie a contact switch while areas **58**, **85**, **86**, and **87** overlie capacitive sensors. A contact switch does not require software to operate. Thus, contact switches would be used for fixed function, basic operations, such as power on-off. The broad combination of an EL panel overlying contact switches is known in the art; e.g. see U.S. Pat. No. 5,950,808 (Tanabe et al.).

[**0049**] FIG. **9** is a cross-sectional view of a back lit capacitive sensor constructed in accordance with an alternative embodiment of the invention. The EL panel in this embodiment is intended to be driven by a single output, battery operated driver **91**, such as disclosed in U.S. Pat. No. 5,313,141 (Kimball). The driver in the Kimball patent overcomes the difficulty of grounding one electrode of an EL lamp. The electrodes are usually left floating to simplify connection to a battery powered driver chip.

[**0050**] In FIG. **9**, conductive layer **34** is grounded and serves two functions. Layer **34** acts as one electrode of EL panel **32** and acts as an electrostatic shield, preventing capacitive coupling to conductive layer **93**, which represents a cross-section of annulus **58** (FIG. **6**).

[**0051**] The invention thus provides a unitary, EL backlit, capacitive touch sensor in which the structure serves as both a switchpad and a display; i.e. as both an input device and an output device. Various materials are identified that provide optimal resistivities for transparent conductive layers.

[**0052**] Having thus described the invention, it will be apparent to those of skill in the art that various modifications can be made within the scope of the invention. For example, other layers can be added to the embodiment shown in FIG. **3**, such as a fixed graphic overlay. A touch sensor and EL panel can be made from heat curable (solvent based) or uv curable resins. A very flexible substrate can be obtained by using a uv curable resin such as Lustercure Special Coat C, as sold by Kolorcure Corp. The substrate is formed on a release layer that supports the substrate while lamp materials (front conductor, phosphor, dielectric, rear conductor) are applied. Polyaniline or resin containing carbon nanotubes or other forms of carbon, see U.S. Pat. No. 6,627,689 (lino et al.), can be used for the conductive layers.

What is claimed is:

1. A personal electronic device comprising:

a capacitive touch sensor and an integral EL panel, wherein the sensor and the panel each include conductive layers;

wherein at least one of the conductive layers is a cured resin selected from the group consisting of conductive resins, resins containing particles of conductive metal oxides, and mixtures thereof.

2. The personal electronic device as set forth in claim 1 wherein said metal oxides include conductive particles selected from the group consisting of indium oxide, antimony tin oxide, ITO, acicular ITO, and doped zinc oxide.

3. A personal electronic device comprising:

a programmable display;

a programmable keypad;

wherein at least one of the programmable display and the programmable keypad includes a capacitive touch sensor and an EL panel in a unitary structure.

4. The personal electronic device as set forth in claim 3 wherein said capacitive touch sensor includes at least one conductive layer including a cured resin containing particles of antimony tin oxide.

5. The personal electronic device as set forth in claim 3 wherein said capacitive touch sensor includes at least one conductive layer including a cured conductive resin.

6. The personal electronic device as set forth in claim 3 wherein said capacitive touch sensor includes at least one conductive layer including a cured resin containing carbon nanotubes.

7. The personal electronic device as set forth in claim 3 wherein said capacitive touch sensor includes at least one conductive layer including a cured resin containing polyaniline.

8. The personal electronic device as set forth in claim 3 wherein said programmable keypad includes a capacitive touch sensor and at least one contact switch.

9. The personal electronic device as set forth in claim 3 wherein said programmable keypad includes a capacitive touch sensor, an EL panel backlighting the capacitive touch sensor, and a grounded conductive layer for shielding the capacitive touch sensor from the EL panel.

10. The personal electronic device as set forth in claim 9 wherein said grounded conductive layer is one electrode of said EL panel and said EL panel is driven by a battery powered inverter:

11. The personal electronic device as set forth in claim 10 wherein said electrode is substantially transparent.

12. The personal electronic device as set forth in claim 9 wherein said grounded conductive layer is the rear electrode of said EL panel.

13. The personal electronic device as set forth in claim 3 and further including cellphone circuitry, wherein said programmable keypad is programmed to cause touch tones to be produced by said cellphone circuitry.

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