

## **HOTTER TECHNOLOGY**

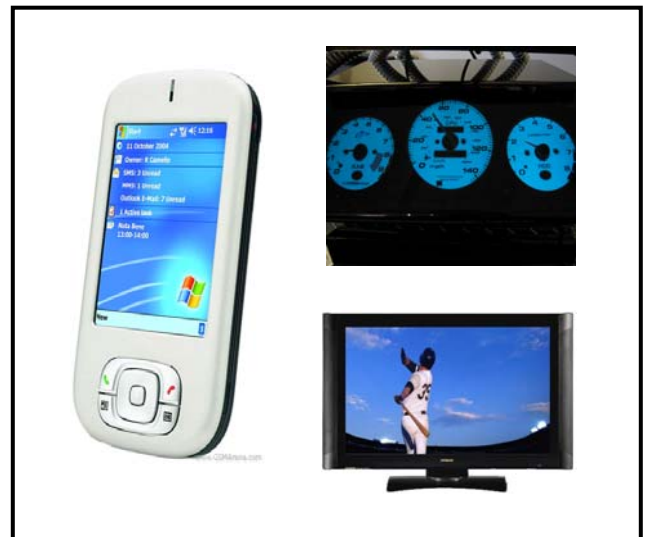
### **Organic Electroluminescent Devices**

Julio Suarez, TRSC, Inc. on behalf of the US Army Research Laboratory

Electroluminescent display is responsible for illuminating devices, such as backlighting for clocks, televisions, cellular phones, PDAs and other widespread electronics. The present invention provides novel organic luminescent materials and a layered device for use with the organic luminescent materials, helping further the Department of Energy's Solid-State Lighting Initiative. The three layers include the transport layer, light emitting layer, and the electron transport layer. This device includes an anode, a cathode, and several layers between the two which contains organic molecules. The technology can generate a multitude of colors by adding different subgroups or side chains to the materials, also known as "doping", resulting in enhanced light output efficiency, color purity, and device operational stability more efficiently than incandescent/fluorescent bulbs.

Features include:

- Doping can occur in any of the three layers (the transport layer, light emitting layer, and/or the electron transport layer)
- Controllable luminescent properties and colors via doping
- Can be applied to curved surface lighting because device is independent of substrate
- Compatible with solid state lighting, full color displays and emissive displays
- Technology's electroluminescent materials may lead to a more efficient means of lighting that is concurrent with Department of Energy's Solid-State Lighting Initiative



Potential markets & applications include:

- Solid state lighting manufacturers
- Straight display manufacturers
- Display components for electronic devices  
Vehicles (dashboards)