

Media Contact: Joe Runde
+1-860-904-7060 (office)
+1-860-819-5463 (mobile)
drjoe@oled-a.org



OLED TVs; Transparent, Flexible, Touch, and High Resolution Displays; New Lighting Products; a-Si and Single-Crystal Silicon Substrates Highlight Display Week

AUSTIN, Tex., June 8, 2009 — OLEDs permeated the Society for Information Display's 2009 International Symposium, Seminar, and Exhibition in San Antonio last week. The growth and influence of organic lights-emitting diodes was clear both on the exhibition floor, with numerous display and lighting products and prototypes, and in the sessions, with 87 technical papers, many in the category of invited with special awards. The poster session added 39 OLED presentations.

"Although the event was down in numbers of both attendees and exhibits, the OLED community is quite optimistic with a record number of displays and lighting devices in numerous exhibits," said Barry Young, Managing Director, OLED Association. "In all, the future of OLED technology appears stronger than ever."

Association members, eMagin, Corning, Ignis Innovation, Kodak, Novaled AG, Samsung Mobile Display (SMD), and Universal Display Corporation (UDC) showed a wide range of state-of-the-art products.

- **eMagin** – the leader in near eye displays showed the industries highest resolution and pixel density
 - 0.44-inch SVGA 3DS 800 x 600 x RGB white plus CFA; 11 μm pixels
 - 0.61-inch SVGA+ 852 x 600x RGB white plus CFA
 - 0.77-inch SXGA 1280 x 1024 x RGB white plus CFA achieving 90% NTSC with 1000:1 CR
- **Corning** – Showed their glass substrates using single crystal silicon that enables manufacturers to get the benefits of high mobility, uniformity and reliability, which they believe will significantly increase performance and yields while reducing system cost.
- **Ignis Innovation** – Demonstrated the use of amorphous-silicon (A-Si) backplanes and voltage compensation, TFT compensation, and efficiency compensation as a backplane for AMOLED displays
 - 2.2-inch 320x240, 200 cd/m^2 , 100K:1, 50,000 hr
 - 4.8-inch quad RGBW, 288x154, 500 cd/m^2 , 100K:1, 75,000 hr; same dot-pitch as 32-inch LCD
- **Kodak** – showed a new innovation in lighting control, which allows light to be directed at a 90° angle to increase brightness in high ambient conditions
 - 6-inch lighting panels featuring color rendering >85%
 - 5-inch RGBW display, with sRGB blue, 380 cd/m^2 peak illumination, 370 μm pitch
- **Novaled, AG** – showed their latest results PIN OLED® technology and Thin Film Encapsulation of OLEDs, yield improvement for singlet and triplet emitters with lifetimes up to 110 thousand hours at efficiencies up to 50 lm/W as used in lighting applications.
- **Universal Display Corporation** – showed their phosphorescent technology
 - 4-inch flexible monochrome on metal substrate, 320 x 240, 100 cd/m^2 at full white, 1000:1, 0.3 mm thick
 - 2-inch sample lighting panels in red, green blue and white
- **Samsung Mobile Display (SMD)** – showed a wide range of AMOLED displays including transparent, flexible, curved and touch capabilities as shown in the next Table. Highlighting the demonstration was 14.1-inch and 31-inch TVs. SMD also showed their first OLED Lighting

prototypes, built on 200x200 mm glass, with 90% uniformity and luminance of 3,000 cdm². The full range of Samsung's OLED display offerings is summarized in the following table.

Size Diagonal Inches	Resolution	Luminance cd/m ²	Contrast Ratio	Color Gamut % of NTSC	Lifetime K hr to T ₅₀	Other Characteristics
2.0	240x320	200	10L:1	NA	NA	Curved, 50um thick
3.2	480x854	300	100K:1	NA	>30	In cell Touch; Projected Capacitive
3.2	240x400	NA	NA	NA	NA	LITI Process; 16M colors
3.7	480x854	300	NA	NA	NA	2D/3D; 120 Hz
3.3	272x480	250/110	NA	NA	NA	Pentile Pixel Layout
3.5	480x860	300	100K:1	>100%	>30	Flexible, 50 μm Thick, no polarizer
4.0	480x272	200	100K:1	NA	NA	16M colors
5.0	800x480	300	100K:1	NA	>30K	16M colors
7.0	1024x600	300	100K:1	NA	>30K	Transparent
12.1	840x504	400	NA	>100%	NA	Peak Luminance 600 nits; 120 Hz, 1M colors
14.1	960x540	200	1M:1	107%	NA	Peak Luminance 600 nits; 120 Hz, 16M colors
31	1920x1080	200	1M:1	107%	NA	Peak Luminance 600 nits; 120 Hz, 16M colors

The Seminar also featured exhibits by a number of other OLED companies, including **LG Displays**, which showed 15- and 19-inch panels; **Merck** showing Merck-DELO encapsulation proven in tests at 85°C/85%RH for 1000 hr; OLED materials for solution and vapor deposition; **SAES**, which makes getters for flexible OLED manufacture with newly developed transparent layer that can be applied through UV or thermal curing; **Add-Vision**, demonstrating printed flexible monochrome OLED displays and lighting, using a low-cost manufacturing process readily scalable to production levels; **Fraunhofer**, showing 320 x 240 monochrome bidirectional OLED microdisplay with a 4 x 3 array of photodiodes for imaging eye position; **Aixtron**, which has OVPD implemented up to Gen 2 and up to Gen 3.5 (650 x 780 mm), with an approach that provides 60% materials utilization; **SimTec**, demonstrating their SimOLED simulation software for LED design; **Daou Xilicon**, which offers OLED manufacturing simulation, including mask editor, structure generation, and optical simulation; and **Sunic**, featuring thermal deposition equipment that supports substrates up to 370 x 470 mm.

About the OLED Association (OLED-A)

OLED-A provides a forum for the interchange of technical and market information. Its membership includes companies involved in small-molecule OLED technology and polymer technology (PLED or light-emitting polymers), as well as supporting technologies, as well as companies incorporating OLED displays and light sources into their products. OLED-A serves its membership by fostering the more rapid development of OLED technology and OLED products; serving as a resource on OLED markets and products for media and investors; functioning as a catalyst in the development of standards for OLEDs; and providing a forum to promote and market OLED technology products.

For more information, visit www.oled-a.org.