World's Largest 21-inch OLED for TVs from Samsung

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Samsung Electronics, the leader in TFT-LCD technology, announced today that it developed the largest single-panel active matrix-based (AM) Organic Light-Emitting Diode (OLED) display.
At 21-inches, this OLED features the highest resolution at 6.22 million pixels (WUXGA: wide ultra-extended graphics array). In addition, the company adopted AM-based technology for its low power consumption and high-resolution qualities.

An organic light-emitting diode (OLED) is a light-emitting diode (LED) made of semiconducting organic polymers. These devices promise to be much cheaper to fabricate than inorganic LEDs. Varying amounts of OLEDs can be deposited in arrays on a screen using simple "printing"

methods to create a graphical colour display, for use as television screens, computer displays, portable system screens, and in advertising and information board applications. OLED panels may also be used as lighting devices. OLEDs are available as distributed sources while the inorganic LEDs are point sources of light. Prior to standardization, OLED technology was also referred to as OEL or Organic Electro-Luminescence.

One of the great benefits of an OLED display over the traditional LCD displays found in computer displays is that OLED displays don't require a backlight to function. This means that they draw far less power and they can be used with small portable devices which have mostly been using monochrome low-resolution displays to conserve power. This will also mean that they will be able to last for long periods of time with the same amount of battery charge.

Samsung's new OLED offers brightness of 400 nit, contrast ratio of 5000:1, color gamut of 75 percent and fast response times, making the product ideal for viewing HD-resolution video images.

Moreover, the OLED uses Amorphous Silicon (a-Si) technology; thus can be mass-produced within Samsung's existing TFT-LCD lines. Samsung Electronics has now applied the a-Si technology to produce large-sized OLED panels within 4th and 5th generation production lines.

"With the development of the world's largest OLED at WUXGA resolution, Samsung has achieved a technological advantage and is positioned well to be a leader in the large-sized OLED for the TV market," said Jun-Hyung Souk, senior vice president of the LCD R&D Center.