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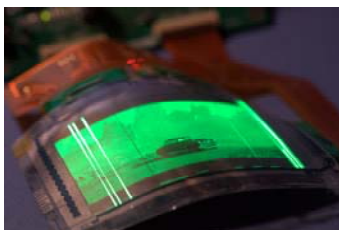
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## FDC and Universal Display Corporation Make Breakthrough in Flexible Display Manufacturing Process; Advance Flexible OLEDs Closer to Mass Market

TEMPE, Ariz. - June 1, 2009 - The Flexible Display Center (FDC) at Arizona State University and Universal Display Corporation (NASDAQ: PANL), today introduced the first a-Si:H active matrix flexible organic light-emitting diode (OLED) display to be manufactured directly on DuPont Teijin's polyethylene naphthalate (PEN) substrate. Implementing Universal Display



Corporation's phosphorescent organic light-emitting diode (PHOLED) technology and materials and the FDC's proprietary bond-debond manufacturing technology, the 4.1-inch monochrome quarter video graphics array (QVGA) display represents a significant milestone towards achieving a manufacturable solution for flexible OLEDs.

Flexible OLEDs are designed to target a number of military and commercial applications that require more rugged displays. With Universal Display's PHOLED technology and materials, the new display achieves the same brightness as traditional displays with extremely low power consumption. Additional advantages of the technology include lower operating temperature due to less heat being generated, easier to drive, longer battery life, and more stable transistors.

“Being a founding member of the Flexible Display Center, Universal Display is pleased to see the significant progress enabled by our cooperation,” said Mike Hack, Vice President of Strategic Product Development at Universal Display. “Together, the FDC and Universal Display have demonstrated technology paths which will accelerate the introduction of exciting new flexible OLED displays on plastic substrates.”

“This development of flexible AMOLED technology gives the industry a solid starting point towards manufacturing, mass production and commercialization of flexible OLEDs,” said Shawn O’Rourke, director of engineering for the FDC. “The fact that we have achieved a functional flexible OLED manufactured directly on plastic using the Center’s manufacturing process represents a significant achievement, and continued developments over the next few years will lead to full color, full motion video flexible displays.”

The flexible backplane display was manufactured at the Flexible Display Center utilizing a 180°C thin film transistor process. The FDC’s facility implements traditional flat panel and semiconductor tools and processes to achieve flexible displays, enabled by its proprietary bond-debond technology to secure the plastic substrate to a rigid carrier during manufacture.

The integration of Universal Display’s PHOLED frontplane delivers a key enabling technology for the flexible OLED. The PHOLED materials allow the OLED to convert up to 100 percent of the electrical energy into light, as opposed to traditional fluorescent OLEDs which convert only 25 percent, providing up to four times more energy efficiency. Universal Display integrated the FDC backplane designed for its PHOLED frontplane to produce the display.

The FDC and Universal Display will present a paper discussing the active matrix flexible OLED on Friday June 5<sup>th</sup> in session 65.4 at SID 2009. Additionally, the FDC will demonstrate this device and other flexible display technologies in booth # 523 at the show. Universal Display, located at booth #676 at the show, and DuPont Teijin are members of the Flexible Display Center.

#### **About the Flexible Display Center at Arizona State University**

The FDC is a government - industry - academia partnership that’s advancing full-color flexible display technology and fostering development of a manufacturing ecosystem to support the rapidly growing market for flexible electronic displays. FDC partners include many of the world’s leading providers of advanced display technology, materials and process equipment. The FDC is unique among the U.S. Army’s University centers, having been formed through a 10-year cooperative agreement with Arizona State University in 2004. This adaptable agreement has enabled the FDC to create and implement a proven collaborative partnership model with over 20 engaged industry members, and to successfully deploy world class wafer-

scale R&D and GEN-II display-scale pilot production lines for rapid flexible display technology development and manufacturing supply chain commercialization. More information on the Flexible Display Center can be found at [www.flexdisplay.asu.edu](http://www.flexdisplay.asu.edu).

### **About Universal Display Corporation**

Universal Display Corporation is a world leader in developing and commercializing innovative OLED technologies and materials for use in flat panel displays, solid-state lighting products, electronic communications and other opto-electronic devices. Universal Display is working with a network of world-class organizations, including Princeton University, the University of Southern California, the University of Michigan, and PPG Industries, Inc. Universal Display has also established numerous commercial relationships with companies such as Chi Mei EL Corporation, DuPont Displays, Inc., Konica Minolta Technology Center, Inc., LG Display Co., Ltd., Samsung SMD Co., Ltd., Seiko Epson Corporation, Sony Corporation, Tohoku Pioneer Corporation and Toyota Industries Corporation. Universal Display currently owns or has exclusive, co-exclusive or sole license rights with respect to more than 940 issued and pending patents worldwide.

Universal Display is located in the Princeton Crossroads Corporate Center in Ewing, New Jersey. The Company's state-of-the-art facility is designed to further technology and materials development, technology transfer to manufacturing partners and work with customers to develop OLED products that meet their needs. Visit Universal Display on the Web at [www.universaldisplay.com](http://www.universaldisplay.com).

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