



## Applied Materials Introduces New Technologies for Next Era of LCD and OLED Displays

October 30, 2012

- **PVD and PECVD technologies to produce faster transistors for ultra-high resolution displays with rapid refresh rates**
- **New generations of systems to enable more cost-effective manufacturing using large area glass**

SANTA CLARA, Calif., October 30, 2012 - Applied Materials, Inc. today announced new [PVD\\*](#) and [PECVD\\*](#) technologies to enable the next era of ultra-high definition ([UHD](#)) televisions, as well as high [pixel density](#) screens for mobile devices. At the heart of this significant transition are new [metal oxide](#) and [LTPS](#) materials used to create faster, smaller thin film transistors (TFTs) for both [LCD\\*](#) and [OLED\\*](#) technologies. The [Applied AKT-PiVot](#) and [Applied AKT-PX PECVD](#) film deposition systems provide display manufacturers with a high-performance, cost-effective path to help bring these advanced materials to volume production.

"The display industry is undergoing one of the most critical technical transitions in the last 20 years - which is being driven by advances in TFT technology," said [Tom Edman](#), group vice president and general manager of Applied's [Display Business Group](#). "Applied Materials has developed a proven portfolio of systems to help our customers make the technical leap to implementing these new films. Customers have reported excellent results with our systems and we already have received multiple orders from major display manufacturers."

For metal oxide-based TFTs, Applied's AKT-PiVot PVD system uses proprietary rotary cathode technology to deposit [IGZO](#), a new material with high electron mobility, to form the transistor channel. The PiVot system provides the industry with a robust IGZO solution capable of overcoming "[mura effects](#)" that reduce the quality of the display. This is an issue that has hindered metal oxide technology from gaining mainstream acceptance for LCDs. In addition, the breakthrough TFT stability of PiVot-deposited IGZO films offers the promise of metal oxide [backplanes](#) for OLEDs, which can significantly lower cost and help make beautiful, affordable, large-area OLED TVs possible.

[LTPS](#) technology is a proven method for building the highest resolution displays in mobile LCD and OLED devices but has been challenged by scaling issues and high manufacturing cost per area. The newly-extended range of Applied's AKT-PX PECVD systems can deposit highly-uniform LTPS films on sheets of glass sized from 1.6m<sup>2</sup> to 5.7m<sup>2</sup>. These larger substrates enable display manufacturers to significantly increase production and drive down cost by realizing the same economies of scale that brought large-area LCD televisions within the reach of billions of consumers around the globe. Applied's systems for large-area glass manufacturing can also help accelerate the transition of LTPS technology to larger screen sizes for both mobile devices and TVs.

For more information about Applied's innovative solutions for display manufacturing, please visit [www.appliedmaterials.com/display](http://www.appliedmaterials.com/display).

Applied will showcase the new systems at [FPD International 2012](#) to be held in Yokohama, Japan from October 31 to November 2. To learn more about Applied's activities at the show, visit [www.appliedmaterials.com/newsroom/events/fpd-international-2012](http://www.appliedmaterials.com/newsroom/events/fpd-international-2012).

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in providing innovative equipment, services and software to enable the manufacture of advanced semiconductor, flat panel display and solar photovoltaic products. Our technologies help make innovations like smartphones, flat screen TVs and solar panels more affordable and accessible to consumers and businesses around the world. Learn more at [www.appliedmaterials.com](http://www.appliedmaterials.com).

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*\*PVD: physical vapor deposition*

*PECVD: plasma enhanced chemical vapor deposition*

*LCD: liquid crystal display*

*OLED: organic light-emitting diode*

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[Photo: Applied AKT-PiVot PVD system for UHD display manufacturing](#)

[Photo: Applied AKT-PX PECVD system for UHD display manufacturing](#)

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