AKT Launches Low Temperature Polysilicon CVD Technology for Producing Advanced Mobile and Handheld Displays

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SANTA CLARA, Calif.--(BUSINESS WIRE)--Oct. 24, 2000--

Systems Will Be Used To Build Brighter, High-Resolution Display

Screens Used In Next-Generation Communications Applications

AKT, an Applied Materials company and the leading supplier of chemical vapor deposition (CVD) systems to the flat panel display (FPD) industry, announces its new Low Temperature Polysilicon CVD chamber technology for manufacturing bright, high-resolution, low-power TFT-LCDs (thin film transistor liquid crystal displays). The new chambers will be available on the AKT 1600, 4300 and 5500 CVD systems; production shipments are expected to begin in the first calendar quarter of 2001 to display manufacturers in Taiwan and Korea.

"We have spent several years perfecting polysilicon technology, and have already shipped many development systems and chambers to customers working on commercializing polysilicon displays," noted Dr. Kam Law, president of AKT. "With the market for this technology increasing at a rapid pace, we are ready to provide our customers with the most advanced production-ready, polysilicon technology available, in a variety of substrate sizes."

Reflective polysilicon-based displays are increasingly found in applications such as cell phones, mobile communicators and PDAs, portable DVD players and mobile computers, because they eliminate the need for a backlight, drastically cut power consumption, and extend battery life. They are also found in digital cameras, camcorders and car navigation displays where high-resolution, outdoor viewing brightness and rugged construction are essential. Conventional TFT-LCDs use amorphous silicon, which is typically found in laptop and desktop computer monitors.

Polysilicon's higher electron mobility allows display makers to build driver circuitry on the edge of the panel, rather than requiring separate chips. It also cuts the number of electrical contacts to the panel by up to 95 percent, for brighter viewing. The smaller pixels and higher electron mobility lead to higher resolution displays which are suitable for video applications.

AKT's polysilicon technology features a multi-step (SiN/SiO2/a-Si) single-chamber deposition process that provides the industry's highest quality, hydrogen-controlled polysilicon precursor film at temperatures up to 430(Degree)C. A separate pre-heat/post-deposition chamber significantly reduces hydrogen in the deposited silicon film while increasing system throughput. The reduced hydrogen content in the polysilicon precursor film enables rapid conversion of the film into polysilicon with an excimer laser anneal process performed in a separate system.

AKT's polysilicon systems continue the use of AKT's patented remote plasma source cleaning technology, which reduces particles and process contamination to the lowest levels in the industry, and dramatically extends the lifetime of process chamber components and time between wet cleans.

According to DisplaySearch, a market research firm, AKT was the global market leader in supplying CVD equipment for FPD manufacturing in 1999. Recent fab capacity expansions and new fabs, particularly in Taiwan, have created increased demand for AKT's high-productivity CVD equipment.

The TFT LCD market was $14.9 billion in 1999, and is expected to grow to $33.4 billion by 2003, according to DisplaySearch. The equipment market for producing TFT LCDs totaled $2.3 billion in 1999, and is expected to reach $3.2 billion by 2003.

Applied Materials (Nasdaq:AMAT) is a leader of the Information Age and the world's largest supplier of products and services to the global semiconductor industry. Applied Materials' web site is http://www.appliedmaterials.com.

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