

Significant Progress in Flexible Display Nanoresearch Announced

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Advance Nanotech, Inc., today announced significant findings in a research project exploring new techniques for powering flexible displays. The project, a collaboration with the Center for Advanced Photonics and Electronics (CAPE) at the University of Cambridge, UK, aims to meet the critical need for the coming generations of flexible displays in folding PDAs, laptops and electronic paper by employing nano structured materials incorporating [carbon nanotubes](#).

The recent growth in the portable display industry has been dominated by liquid crystal (LCD) and organic light emitting (OLED) displays. Critical to migrating these technologies to a flexible platform is the development of flexible transparent conductors. Our scientists are exploiting the unique properties exhibited by carbon nanotube composites, adding robustness and conductivity to flexible and transparent materials.

"In today's display industry, indium tin oxide is almost exclusively used as a transparent conductor. However, this material has three serious drawbacks for the next generation of display technology - it has risen in cost by over an order of magnitude in the past five years, it is not compatible with the need for flexible displays and it is difficult to recycle," said Dr. Robert Murphy, a CAPE researcher working on the project. "The AVNA technology represents a new way of approaching flexible displays. Our findings are the result of months of careful manipulation of selected polymers and the detailed study of chemical treatments and carbon nanotube characteristics."

Nanostructured materials offer a unique opportunity to simultaneously optimize traditionally contradictory materials properties. For example, nanowire and nanotube composite materials can result in electrical conductors that are also transparent and flexible, a critical need for the coming generations of flexible displays in folding PDAs, laptops and electronic paper.

"With the evolving design of PDAs and laptops requiring flexible screens, and the rising cost of energy around the globe, there is an immediate need for high-efficiency, low cost flexible display technology," said Peter Gammel, Senior Vice President, Electronics, at Advance Nanotech. "The carbon nanotube flexible display technology that we are developing with CAPE is environmentally friendly and will lead to displays that are more efficient to manufacture."

Source: Advance Nanotech, Inc.

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