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POLL

Which of the following topics will be the most significant application for plastic electronics over

Carbon nanotubes grown at lower temperatures

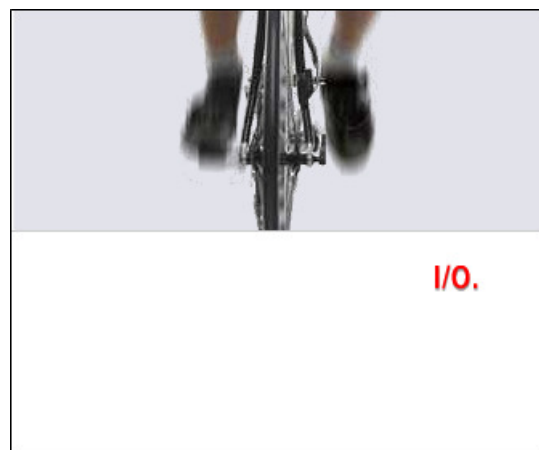
[EE Times Europe](#)

08/09/2006 10:27 AM

LONDON — Researchers at the University of Cambridge have successfully grown nanotubes at a temperature which permits their integration into present complementary metal-oxide semiconductor (CMOS) technology.

The researchers in the Department of Engineering at the University are led by Mirco Cantoro, Stephan Hofmann, Andrea Ferrari and John Robertson, in collaboration with colleagues at the Cambridge Hitachi Laboratory and the Department of Materials Science, University of Cambridge, succeeded in growing single-wall carbon nanotubes at temperatures as low as 350 °C.

Thus far the growth of nanotubes has been carried out at very high temperatures, and growth below 500 °C was believed impossible and this stopped the direct implementation of nanotubes into electronic devices. Trying to integrate nanotubes above 400–450 °C would in fact damage the inter-metal dielectrics commonly employed in CMOS device fabrication.



These nanotubes, grown by thermal chemical vapour deposition are promising candidates for integration into existing nanoelectronic devices.

This result also sheds new light on the possible mechanisms that occur during carbon nanotube growth. Previously, the assumption that the catalyst has to be liquid often dominated carbon nanotube growth model considerations, but at these lower temperatures evidence has been found of a solid catalyst. These findings extend to the catalytic growth of other nanostructures in general.

TOP 5 UK STORIES

- [DAB module from Frontier offers direct iPod docking](#)
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Around EE Times Europe



AFDEC members sales growing as market stays flat

The Association of Franchised Distributors of Electronic

Components (AFDEC) is forecasting that the U.K. electronic components market (TAM) available to distributors will decline slightly in 2007 by 0.2 percent to £3.786 billion but the distribution total available market (DTAM) will grow by 2 percent to £ 1.137billion.

SEMI issues "alert" over China RoHS March deadline

SEMI has issued a newsletter containing a "regulatory alert" on China's legal restrictions of hazardous substances (RoHS), saying some of its members need to prepare to act before March 1, 2007.



'Teardown' finds Sony taking a bath on each PS3

Sony is taking a considerable loss of more than \$240 per unit on each PlayStation 3 video gaming console, according to a "teardown" analysis conducted by market research firm iSuppli.



Under the Hood: Inside the Nintendo Wii

Only days after tearing down Sony's Playstation 3, Semiconductor Insights went inside the Nintendo Wii, with its three-axis-motion signal-processing technology and 90-nm IBM Broadway processor.

the next few years?

- organic light emitting diode displays
- radio frequency identification tags
- sensor applications

Recently Arrowhead Research Corp., a nanotechnology research company, has [announced a deal](#) to sponsor carbon nanotube transistor research by a professor at the physics department at the University of Florida.



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