Tiny Tech Gains in Stature

Nanotech is slowly migrating from the lab to the street, and it’s getting noticed.

Until recently nanotechnology has been little more than a buzzword for many, with the major announcements in the space being mostly about using nanoparticle technology in traditional materials applications. But new technology and capabilities are moving nanotech from the realm of science fiction into the realm of the real for application areas previously unthought-of.

I had the opportunity to take a closer look at nanotech (no pun intended) at a recent event held by a group including the German Center for Research and Innovation, ConRuhr North America, and the Center for Nanointegration Duisburg-Essen. NanoArt New York, held at the German House in Manhattan, combined a discussion of the science of nanotech with an exhibition of the art of nanotech. Not only are images of nanoscale structures quite impressive, some of them are also quite beautiful.

The presenters included Vincent Caprio, the Executive Director of the NanoBusiness Commercialization Association (www.nanobca.org [1]) who talked about market issues and obstacles to nanotech adoption. He also correctly pointed out that nanotech needs to identify itself more strongly as an industry, and present the technology as a core enabler for next-generation devices and processes. Another presenter, Axel Lorke, the Director of the Center for Nanointegration Duisburg-Essen, not only discussed the future of nanotechnology in microdevices with nanoscale features but pointed out that nanotechnology is already all around us, and not just in materials applications. For example, semiconductor fabrication now occurs at the Nanoscale, and the operational speed of those devices has been measured in nanoseconds (1GHz = 1ns) for some time now. Cherie Kagan, in her role (among many) as the Director of the UPenn Energy Commercialization Initiative, is also exploring the use of nanostructured assemblies and thin films to enhance the performance of electronic, optoelectronic, and photonic devices. Her presentation covered areas where materials and electronic science cross paths in

nanotechnology. Dr. Rolf Kinne was our host as the Director of ConRuhr, which has a multinational research facility in NY State.

The biggest impression to me from all the presentations that evening was that although nanotech is a powerful enabling core technology, the lack of understanding by those unacquainted with it coupled with the lack of a unifying industry segment means that nanotech will make inroads into the marketplace, but they will be diverse in nature and not supported by a central industry group. What nanotech needs is an identity makeover, showing that it isn't just the grist for science fiction (full disclosure, my 2005 novel Cyberchild [2] also has nanoscale microbots in it) but is a comprehensive array of related technologies that is already in quite a few products, with its best days ahead of it.

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