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Conference showcases nanodevices progress

posted by [JimLewis](#) on Monday November 04, @01:50AM

Covering the [10th Foresight Conference on Molecular](#)

Molecular Nanotechnology

[Nanotechnology](#) for UPI Science News, Scott R. Burnell reports that **[Conference extols promise of nanotech](#)**. "Science has only reached the foothills of a metaphorical Mount Everest when it comes to nanotech, said Mildred Dresselhaus, a professor at the Massachusetts Institute of Technology in Cambridge, Mass. [and the Keynote Speaker at the Conference], who has dealt with structures at the nanometer scale for more than 20 years."

Burnell reports that a key theme expounded by Dresselhaus and other speakers was the unique properties that matter takes on at the nanometer scale. For example, a metal that is electrically conductive in bulk quantities can become a semiconductor when confined to a nanowire. Thus nanowires, carbon nanotubes, and other materials with structures engineered on the nanometer scale possess unique electrical and optical properties that might be exploited to make molecule-sized electronic circuits, extremely sensitive biological sensors, and other components of next-generation computing products and communications networks.

In a second article, [Nanotech finds biological inspiration](#), Burnell reports that nanotechnology "research is focusing increasingly on DNA, nature's own molecular-scale instructions, as a possible building block for man-made devices..." One speaker, Nadrian Seeman of New York University, said "DNA won't ever compete with silicon for computer chips, but it will probably work to organize the next

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generation of silicon devices." Echoing that sentiment, Chris Dwyer of the University of North Carolina at Chapel Hill said of the idea of using the DNA molecule as scaffolding for the assembly of computer circuits, "Computer engineers are already thinking about how to design circuits using these tools." Proving that DNA-like structures also are capable of mechanical work, Peixuan Guo of Purdue University described how evolution produced a set of six RNA molecules that form a motor for packing viral DNA into its protein shell. Note that the theme of using DNA to enable the self-assembly of new structures was also recognized in awarding the [2002 Foresight Institute Feynman Prize \(Experimental\)](#) to Chad Mirkin of Northwestern University (see [Nanodot Oct. 24, 2002.](#))

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