

The Nanogirl News~

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July 13, 2004

Charles Accused over Science Warnings. The Prince of Wales was accused today of raising unfounded scientific scares following his latest warnings about the new science of nanotechnology. Eminent fertility expert Lord Winston said it was "very unfortunate" that Charles had used a newspaper article yesterday to raise the spectre of a thalidomide-style disaster. Instead of fostering a mature debate on the pros and cons of the emerging technology, Charles is feeding a growing suspicion of science in society, said Lord Winston. (News.Scotsman 7/12/04)

<http://news.scotsman.com/latest.cfm?id=3191675>

Also see the original Sunday article in the Independent:

<http://argument.independent.co.uk/commentators/story.jsp?story=539977>

Download the BBC news coverage video via RealPlayer:

http://news.bbc.co.uk/media/video/40369000/rm/40369897_nano06_mcgourty_vi.ram

No big bang but big nano bucks. After decades of hype and science fiction, nanotechnology is taking baby steps toward a trillion-dollar reality. From health care to aviation, it promises to reshape business and make a few pioneers very rich. But if you're afraid of Grey Goo or cyborgs invading your home, you might want to take a second look because, as the National Post's Joseph Brean reports in the first of a three-part series, the nanofuture is as uncertain as it ever was. (National Post 7/3/04)

<http://www.canada.com/national/nationalpost/news/artslife/reviewandbooks/story.html?id=1e61eb85-1443-40c8-99b>

Despite House's okay, little time left to pass nanotech bill this year. With little time left on the congressional legislative calendar, the prospects this year for new legislation recently introduced by Rep. Mike Honda, D-Calif., aimed at helping to bring nanotechnology advances to market appear dim. The bill (H.R. 4656) would create a public-private partnership aimed at investing in nanomanufacturing. The measure calls for the establishment of a new program, the Nanomanufacturing Investment Partnership, within the Department of Commerce that would provide direct investments, which must be matched by private sector partners, in "pre-commercial nanomanufacturing research and development projects." (SmallTimes 7/12/04)

http://www.smalltimes.com/document_display.cfm?document_id=8159

Metallic Contacts to the Nanoworld. Method fashions nanosized electrical leads on nanoscale semiconductors. Ever try connecting speakers to a stereo receiver using automobile jumper cables? Of course not. The mismatch in size makes the task clumsy. Yet researchers who study nanoscale electronics usually wire up the nanometer-sized circuit components—carbon nanotubes, for example—using electrical contacts that are enormous compared with the nanotubes. They accept the size disparity because no one has developed a viable way to avoid it. Until now, that is. (Chemical & Engineering News 7/5/04) <http://pubs.acs.org/cen/news/8227/8227notw1.html>

Nanotechnology-based applications are accelerating the development of nanomedicine. With the potential for targeted therapy, and therefore reduced side effects, nanomedicine holds the promise of significantly improving quality of life parameters. At the same time, the adoption of nanotechnology-based applications by large therapeutic and diagnostic companies is accelerating the development of nanomedicine. The prospect of site-specific therapeutic action and by extension of fewer side effects means that nanomedical applications have an enhanced risk-benefit analysis ratio. This is motivating their growing popularity as a therapeutic option. (News Medical.Net 7/5/04) <http://www.news-medical.net/?id=3067>

Are nanotech fabrics any good? Imagine you're balancing a cup of coffee and heading back to your workstation and the inevitable happens — the coffee spills. There are huge, blotchy coffee stains across your workwear. How can you turn up like this for that important mid-afternoon client meeting? If you're wearing stain-resistant clothing, you may not be badly off. The chances of your favourite white shirt sporting an ugly, dull brown stain post-wash are minimized if you are wearing shirts made of fabric that is treated with nanotechnology. The menswear market today is flooded with shirts and trousers that are wrinkle free, stain resistant and have cooling properties. All of these essentially use what is called nanotechnology. (Rediff.com 7/3/04) <http://inhome.rediff.com/money/2004/jul/03perfin.htm>

Tuning the Nanoworld. New Methods for Constructing Nanostructures and Calculating Their Electronic States. Scientists at Lawrence Berkeley National Laboratory have found new ways of combining quantum dots and segmented nanorods into multiply branching forms and have applied new ways to calculate the electronic properties of these nanostructures, whose dimensions are measured in billionths of a meter. (Berkeley Lab 7/7/04) <http://www.lbl.gov/Science-Articles/Archive/MSD-tuning-the-nanoworld.html>

NSF grant funds molecular photosensor. Florida Tech researchers have earned a \$100,000 National Science Foundation grant for a nanotechnology project, to develop a molecular photosensor. The photosensor will be based on compounds, such as Vitamin A, found in mammalian retinae. Dr. Joel Olson and Dr. Nasri Nesnas, assistant professors of chemistry, earned the grant to develop the technology, which can be useful in the fabrication of miniscule cameras—the size of a grain of sand—requiring very little power. (EurekAlert 7/9/04) http://www.eurekalert.org/pub_releases/2004-07/fiot-ngf070904.php

Light on a Chip. An ultrafine nanometre 'drill' could be used to make some of the tiniest lenses imaginable and may also allow scientists to harness light for use in optical computers of the future, thanks to research published today. Scientists from the UK and Spain describe in this week's Science Express (8 July) how artificial materials with tiny grooves and holes drilled into their surfaces could channel and focus light beams on a chip. (Imperial College London 7/8/04) <http://www.ic.ac.uk/p5394.htm>

Patent for Coated Single Walled Carbon Nanotubes and Ropes Awarded to Carbon Nanotechnologies. Carbon Nanotechnologies, Inc (CNI) announced today the allowance of another U.S. Patent, this one for coated single-wall carbon nanotubes and ropes of single-wall carbon nanotubes. The technology gives CNI a patent on a composition that is single-wall carbon nanotubes with a nanometer-scale coating of another material that can include polymers and metals. This technology is part of the intellectual property developed by Nobel-Prize winning scientist Dr. Richard Smalley and licensed exclusively to CNI by Rice University in 2001. (PhysOrg 7/13/04) <http://www.physorg.com/news371.html>

>> *From Small Things, Big Things Will Come. For Germany's Degussa, Nanotronics center is new way to turn nanotech research into products.* Next April, Degussa will inaugurate its new Nanotronics science-to-business center in Marl, Germany. That's a short 10 months after the company's executives and representatives of local and state governments and the academic community laid the center's foundation stone in a gala ceremony at the end of June. Over the next five years, Degussa will invest some \$60 million in the center,...(C&E 7/12/04) <http://pubs.acs.org/cen/nanofocus/>

Nanoparticles stiff from constant strain. Take something no wider than a human hair and shrink it a thousand fold to a few nanometers across, and its electronic and other properties change radically. But whether the crystal structure of these nanoparticles remains basically the same is a matter scientists continue to debate. Now, a new report by scientists at the University of California, Berkeley, and Lawrence Berkeley National Laboratory (LBNL) shows that's far from the case. Zinc sulfide nanoparticles a mere 10 atoms across have a disordered crystal structure that puts them under constant strain, increasing the stiffness of the particles and probably affecting other properties, such as strength and elasticity, according to the team's report. (UCBerkeley 7/6/04) http://www.berkeley.edu/news/media/releases/2004/07/06_strain.shtml

High-Yield Path to Dendrimers. A copper(I)-catalyzed fusion reaction of azides and alkynes to form 1,2,3-triazoles has been applied to dendrimer synthesis for the first time and has been found to give dendrimer yields higher than those achieved with any other reactions. Dendrimers are large, globular molecules comprising several branches—or dendrons—emanating from a central core. A range of functional groups can be put on dendrimer surfaces to endow them with specific chemical and physical properties. (C&E 7/12/04) <http://pubs.acs.org/cen/news/8228/8228notw1.html>

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The Innovation Specialists. Thought the tech revolution came to an end when the dotcom bubble burst? Think again. From nanotech (in your washing machine!) to stem-cell research to Internet businesses, innovations are coming fast and furious. Meet 10 leaders who are helping to shape the future of communications, entertainment, medicine – and Laundromats. (Time 7/11/04)
<http://www.time.com/time/europe/magazine/article/0,13005,901040719-662741,00.html>

Building a better car – one atom at a time. Tiny assembly lines cut costs, boost safety. Researchers are finding ways to make vehicles safer, lighter, more powerful – and ultimately less expensive – by building materials one atom at a time... Factories will run more efficiently with the help of microscopic assembly machines. Injuries caused by accidents will be reduced. And eventually the price of your dream car might finally be a little closer to your budget. General Motors Corp. is already using nanocomposites to build lighter but stronger running boards for several van models, as well as cargo beds for the Hummer H2 and exterior panels for the Chevrolet Malibu sedan. (Enquirer Cincinnati 7/11/04)
http://www.enquirer.com/editions/2004/07/11/biz_nanocars11.html

Wall Street falls for nanotech. The chief executive of Nano-Tex LLC warned about the mounting hype around his company and other nanotechnology startups at a recent investor conference. But the first question from the audience showed how his message had been digested. "When is your IPO?" Nanotechnology, or science at the atomic level, has become the latest fad on Wall Street as the stock market shakes off its dot-com funk. Bankers and venture capitalists are pushing for initial public offerings of nanotech startups. Everyone, from day traders to fund managers, seems eager to get in early on what they hope will be the next big thing. (Globoandmail 7/13/04)
<http://www.globetechnology.com/servlet/story/RTGAM.20040713.gtnano0713/BNStory/Technology/>

Trade Group Calls for More Nano. Despite the best efforts of the Bush administration, the U.S. semiconductor industry will still need a \$1.5 billion shot in the arm to succeed in nanotechnology. The Semiconductor Industry Association (SIA) today called for the creation of a Nanoelectronics Research Institute (NRI) to direct and coordinate a massive research effort and assure continued U.S. leadership. "The price for not starting now on a massive, coordinated research and development effort in nanoelectronics could be nothing less than a loss in just two decades of U.S. economic and defense leadership," said John E. Kelly, III, senior vice president and group executive of the IBM Technology Group, in a statement. (Earthweb 6/10/04) <http://news.earthweb.com/ent-news/article.php/3366581>

(Interview) Tim Harper on NanoWater. Questions by Rocky Rawstern, Editor Nanotechnology Now. Please talk about NanoWater, the reasons behind it, and the goals and timeframe. Why water, as opposed to food or shelter, or other basic needs? NanoWater is a very simple idea that grew out of a meeting with Former Israeli Prime Minister Shimon Peres at the World NanoEconomic Congress in Washington DC last year. He made the only speech I have ever seen that got a standing ovation at a nanotech conference, with the simple message that perhaps technology could do something positive. We followed

this up with a visit to Israel just before Christmas last year to understand at first-hand the problems facing countries with scarce water resources.

(nanotechnow 7/12/04)

<http://nanotech-now.com/Tim-Harper-NanoWater-July04.htm>

Laser Tweezer Traps Nanotubes. Researchers from Arrayx, Inc. and New York University have demonstrated that it is possible to trap and move carbon nanotubes with optical tweezers. This is tricky because nanotubes' diameters are orders of magnitude smaller than the wavelength of light used to move them. The researchers used a wavelength of light that was strongly absorbed by the carbon nanotubes. By strongly focusing the light, the researchers were able to trap the nanotubes.

(MIT Technology Review 7/13/04)

http://www.technologyreview.com/articles/rnb_071304.asp

Is Small Different? Not Necessarily Say Georgia Tech Researchers.

Researchers at the Georgia Institute of Technology and NASA suggest that materials on the nanoscale may sometimes be subject to the same physical rules as their macro-world counterparts. The findings provide an exception to the conventional scientific notion that objects small enough to be measured in nanometers (one-billionth of a meter) behave according to different rules than larger objects. A team led by Lawrence Bottomley in Georgia Tech's School of Chemistry and Biochemistry and Jonathon Colton in the School of Mechanical Engineering found that the mechanical response of a multi-walled carbon nanospring was remarkably similar to the rules that govern the mechanical properties of springs on the macro scale. The results are published in the American Chemical Society journal Nano Letters, Volume 4, Number 6.

(Ascribe 7/12/04)

<http://www.ascribe.org/cgi-bin/spew4th.pl?ascribeid=20040712.091847&time=09%2028%20PDT&year=2004&publi>

(2pages) The Methuselah Report. Living to be 120 might be attainable, but is it desirable? "I believe extraordinary longevity is absolutely inevitable,"

says Donald Louria, a professor at the New Jersey Medical School. "It's not a matter of if we'll have extraordinary longevity, but when." –Genetics and nanorobots discussed– (AARP July/August04)

<http://www.aarp.org/bulletin/yourhealth/Articles/a2004-07-07-methuselah.html>

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