

**Center for Nanotechnology in Society**  
**University of California, Santa Barbara**

[www.cns.ucsb.edu](http://www.cns.ucsb.edu)

**WEEKLY CLIPS**

April 20 - May 3, 2010

TOP DECK

What the nation's (& world's) top papers, news wires and sources have been saying about nanotechnology.

[White House Advisers: Nanotech Safety Efforts 'Commendable'](#)

AOL News

April 20, 2010

Andrew Schneider

"The United States has five years to double the billions it's spending on commercializing nanotechnology or it will lose its front-runner position in the global race to create and rearrange atoms into lucrative and possibly world-changing products, presidential advisers declared in their latest review of the government's nanotech activities.

'U.S. leadership in nanotechnology is threatened by several aggressively investing competitors such as China, South Korea and the European Union' the President's Council of Advisors on Science and Technology concluded in a 71-page report. To meet that threat, it recommended not only increasing spending, but reforming some related federal programs and policies."

[Opinion: A Misleading Portrait of Nanotechnology](#)

AOL News

April 20, 2010

Clayton Teague

"Andrew Schneider's series, ['The Nanotech Gamble: Bold Science, Big Money, Growing Risks,'](#) posted March 24, failed readers by ignoring the federal government's evidence-based, multipronged strategy for ensuring the safety of new products produced by nanotechnology.

As Schneider was told by federal officials but chose not to write, the United States is in fact the global leader in nanotechnology-related environmental, health and safety (EHS) research and development. From fiscal year (FY) 2005 to FY 2009, the federal government invested \$254 million in nano-related EHS research -- more than all other countries of the world combined."

#### [Possible nano treatment for acne created](#)

April 20, 2010

"SAN DIEGO, April 20 (**UPI**) -- A U.S. bioengineer says she has created a possible new acne treatment that uses nanotechnology to deliver the therapy directly to skin-dwelling bacteria.

University of California-San Diego graduate student Dissaya Pornpattananangkul said she, along with Professor Liangfang Zhang, developed a 'smart delivery system' that uses nanotechnology to deliver lauric acid -- a natural product found in both coconut oil and human breast milk -- directly to the bacterium propionibacterium, which causes common acne."

#### [IBM announces nanotech breakthrough](#)

April 22, 2010

"SAN JOSE, Calif., April 22 (**UPI**) -- IBM scientists announced creation of breakthrough nanotechnology that can create tiny patterns and structures at greatly reduced cost and complexity.

To demonstrate the new microscopic technique, IBM researchers said they created a 3D map of the Earth that's so tiny that 1,000 of them could fit on one grain of salt. The technique uses a silicon tip with a sharp apex 100,000 times smaller than a sharpened pencil and similar to the kind used in atomic force microscopes."

### [This Won't Hurt a Bit: Tiny Patch Could Replace Shots](#)

AOL News

April 23, 2010

Andrew Schneider

"Good news for the needle-phobic: A vaccine delivered by a nanopatch works as well as one delivered with a syringe, but is pain-free and uses 100 times less medication, according to researchers from the Australian Institute for Bioengineering and Nanotechnology.

Aside from sparing patients who are squeamish about being pricked, this new application of nanotechnology could have significant public health benefits."

*This story also covered by:* [Sydney Morning Herald](#) (Australia), [Times of India](#)

### [Nanodevice Powered by Motion](#) - Your Every Step Could Soon Generate Electricity

ABC News (U.S.)

April 25, 2010

Eric Bland

"Every move you make, every step you take, you can generate electricity. By cramming 20,000 nanowires into three square centimeters, scientists from Georgia Tech have created the world's first device powered solely by piezoelectric materials.

A piezoelectric material is something that, when pushed or pulled, generates a mild electrical charge. Within three to five years piezoelectric nanowires, woven into a cotton shirt or housed in a shoe heel, could charge a cell phone or laptop battery after even a short walk.

'This is a key step to designing technology that will be useful in the near future,' said Z.L. Wang, a professor at Georgia Tech and co-author of two new papers in Nature Nanotechnology and Advanced Materials."

### [Concerns about the environmental impact of nanoparticles](#)

Ethiopian Review

April 26, 2010

"Narrator: This is Science Today. Nanotechnology is considered to be the next revolution in technology and already, the first generation of nanoparticles are being manufactured for products ranging from sunscreen to carbon nanotubes used in baseball bats and bicycles. Rick Kelly, an Environmental Health and Safety Manager at the Lawrence Berkeley National Laboratory, says there are concerns about the environmental impact of these materials.

Kelly: Maybe in at least some of the cases, the new stuff that's going to evolve out of nanotechnology is potentially harmful to workers or to the environment or even to consumers. As it stands now, there is close to nothing . . . very little for government regulation of nanomaterials."

### [Swiss police foil bomb attack against IBM](#)

Associated Press (via *Washington Post*)

April 26, 2010

"GENEVA -- Police have arrested two men and a woman suspected of planning to bomb an IBM Corp. research facility near Zurich, Swiss media reported Monday.

Prosecutors said two Italians and a Swiss national suspected of planning a bomb attack against an international company had been arrested, but declined to confirm the target .

. .

The SonntagsBlick newspaper reported the suspects intended to attack a nanotechnology research facility that IBM Corp. is building in Rueschlikon."

Also reported by the [New York Times](#), [Register](#) (U.K.), [Daily Mail](#) (U.K.).

### [Scientists near bionic breakthrough](#)

April 26, 2010

"OAK RIDGE, Tenn., April 26 (**UPI**) -- U.S. government scientists say they have created a new way of processing carbon nanotubes that might lead the way toward futuristic bionic applications.

Oak Ridge National Laboratory researchers say while nanotubes have electrical and other properties that make them attractive for use as artificial neural bundles in prosthetic devices, the challenge has been to make bundles with enough fibers to match that of a real neuron bundle."

### [Skin Care: The Unrecognized Risks of Perricone, M.D. Skin Care Products](#)

*Huffington Post*

April 29, 2010

Samuel S. Epstein

"Dr. Perricone posted a full page ad on his Cold Plasma product in the December 26, 2009 *New York Times Magazine*. The ad promised that the product, 'gives skin everything it needs,' and 'works better for skin than anything else ever used.' According to his website, Dr. Perricone is noted for his "holistic approach to aging,' and developing a program that 'will enhance your life with better overall health and increased energy' . . .

Fullerenes, also known as nanoparticles, with an average size of 1/10,000 of a millimeter, have been introduced without any labeling into a growing number of Dr. Perricone's anti-aging products, particularly skin creams . . . However, the use of nanoparticles in cosmeceuticals poses a generally unrecognized major public health hazard."

[Nanoscience may help cancer researchers](#)

May 3, 2010

"BETHESDA, Md., May 3 (**UPI**) -- Scientists say a U.S. government project is making progress in finding ways to use nanotechnology to improve diagnosis, treatment and prevention of cancer.

Piotr Grodzinski and colleagues at the National Cancer Institute's Alliance for Nanotechnology in Cancer say the \$145 million project is producing innovations that will radically improve care for the disease."

## ON DECK

### What Local Sources are Reporting

[Oxane plant 'substantially' ahead of schedule](#)

*The City Wire* (Ft. Smith, AK)

April 20, 2010

Marla Cantrell

"Work is 'substantially' ahead of schedule on the new Oxane Materials plant in Van Buren's Industrial Park. Mayor Bob Freeman met with representatives from the

company in early April and is pleased with the progress. The company announced Dec. 28, 2009, it would locate an operation in Van Buren . . .

The facility will use nanotechnology to manufacture proppants, which are suspended in the frac fluid used to drill gas and oil wells. When forced into the underground fractures, the proppants hold the breaks open after the frac fluid is removed.

'The technology was developed in a laboratory at Rice University and is transitioning into the manufacturing market,' Freeman said. 'This is a start-up, first production of this product. There's expected to be a huge demand for this product.' "

### [Who's Regulating Nanotechnology?](#)

*Twin Cities Daily Planet* (blog)

April 22, 2010

Bill Lilliston

"Nanotechnology and its applications are so small that it can be hard to get your head around, but there are more than 1,000 products with nanomaterials already on the market, so we'd better get a handle on this quick.

Nanoscale science and technology manipulate matter at the level of 1-300 nanometers (or billionths of a meter) and claim a seemingly amazing array of applications for medicine, technology, energy and food. Pulitzer Prize-winning reporter Andrew Sheider's recent investigative series '[The Nanotech Gamble](#)' lays bare the potential health and environmental risks and extent to which largely unregulated nanotech products are already on the market, and in the food supply, without our knowledge."

### ["Synthetic Biology" Sparks Nano-Terror Scenario](#)

*New Haven (CT) Independent*

April 22, 2010

Jim Motavalli

*"It is a late night at the top-secret National Biotech Laboratories in Gaithersburg, Maryland.*

*The cleaning crew is mopping up, a security guard is patrolling, and Dr. Derrick Benson's desk light is the only illumination on the infectious diseases floor . . .*

Dr. Benson and Dan Smiley are fictional characters. The above fantasy, at least for now, belongs in a network television melodrama. But some scientists believe a scenario like this might loom not too far in the future-and our government has some catching up to do to prevent it."

[Colorado Company Develops Sci-Fi Cancer Fighting Agent](#) - Nucleus Of Cancer Cells Targeted To Stop Cell Growth, Shrink Tumors  
KMGH (Denver)  
April 26, 2010

"Centennial, Colo. -- Fighting cancer is all about early detection and quickly finding the right treatment combination.

In many cases, the first course of treatment cancer patients try doesn't effectively shrink or destroy the tumor. Current scans can be very expensive and are often only approved every three to four months. This can make it difficult for oncologists to know early in the process that they need to change the course of treatment."

[How Things Work: Atomic force microscopy](#)  
*The Tartan* (Carnegie Mellon Univ.)  
April 26, 2010  
Kush Mangal

"Atomic force microscopy (AFM), a popular tool for imaging, measuring, and manipulating matter at the nanoscale, was invented in 1986 and was commercialized in 1989. This type of microscopy gathers information by feeling the surface with mechanical probes. AFM is a type of scanning probe microscopy (SPM) in which the image of a surface is obtained by moving a probe over a sample and recording the interactions between the probe and the surface of the sample.

AFM is used for a variety of biological applications, including imaging molecules, cells, tissues, and biomaterials. At Carnegie Mellon, AFM is being used to study peptides and lipoproteins. AFM, popularly used in nanotechnology research, has been used to image the surface of the ivy plant to understand how it climbs structures, as stated in an article on [www.photonics.com](http://www.photonics.com)."

[Nanotechnology takes hold in SE Minnesota](#)

*Winona (MN) Daily News*

April 26, 2010

Patrick B. Anderson

"RUSHFORD, Minn. - A microscope clicked away in a small room under City Hall. Standing near the device's wooden harness, high school teacher Tom Vix and his chemistry students quietly shifted in place, waiting for the low tick-tick-tick of the control mechanism to quit.

Vix was there to show his class one of the fruits of the city's growing nanotech industry: the Rushford Institute for Nanotechnology's \$80,000 atomic force microscope."

[New blood screening method sheds light on cell membranes and disease](#)

Medill Reports (Northwestern U.)

April 28, 2010

Kevin Eisenmann

"A novel way of imaging red blood cells could provide insights into how these oxygen-carrying cells navigate the body's maze of blood vessels.

The payoff may promise better screening for blood cell related diseases such as malaria and sickle-cell.

Researchers published their findings this month in the Proceedings of the National Academy of Sciences."

[Seeking STAMP of approval](#)

*The Daily News* (Batavia, NY)

April 30, 2010

Virginia Kropf

***EDITOR'S NOTE:*** *In 2005, then State Sen. Mary Lou Rath met the northeastern business director for a global engineering and architectural company working to develop a technology park north of Albany. She immediately thought of the impact such a development would have in her district, and put him in touch with Genesee County Economic Development Center president Steve Hyde. By 2007, a proposal was put together for a Science and Technology Advanced Manufacturing Park in the town of Alabama.*

*In a three-part series, The Daily News will explain how the project got started, what nanotechnology is and how such a facility might impact, not only the town of Alabama, but Genesee County and the rest of Western New York."*

['Nanotechnology': Seeing big things in small packages](#)

*The Daily News* (Batavia, NY)

April 30, 2010

Virginia Kropf

"A nanometer is not a piece of test equipment, as one Alabama resident thought, until visiting the University of Albany's College of Nanoscale Science and Engineering last week.

The contingent of Genesee County residents and officials who visited Albany and Saratoga Springs agree what they learned was mind-boggling.

The group, all with an interest in the proposed advanced technology and science park proposed for the town of Alabama, toured the new state-of-the-art College of Nanoscale Science and Engineering, the first and only college in the world dedicated to research, development, education and deployment in the emerging disciplines of nanoscience, nanoengineering, nanobioscience and nanoeconomics."

[Supporters say STAMP project represents area's future](#)

April 30, 2010

*The Daily News* (Batavia, NY)

Virginia Kropf

"Tom Cortright has no doubts how much the construction of a science technology and advanced manufacturing park would change the town of Alabama, where he has lived all his life . . .

[N]anotechnology was a name no one recognized, but it is now an industry which drives the national gross domestic product with an upward growth of 9 percent.

"We have a saying," [Jack Kelley] said. "When you talk economic development, economic development happens."

[What's Really in Sunscreen?](#) (sidebar item)

*Record-Searchlight* (Redding, CA)

May 2, 2010

[Nanodots breakthrough may lead to 'A Library On One Chip'](#)

*Garner* (NC) *News*

May 2, 2010

"A researcher at North Carolina State University has developed a computer chip that can store an unprecedented amount of data -enough to hold an entire library's worth of information on a

single chip. The new chip stems from a breakthrough in the use of nanodots, or nanoscale magnets, and represents a significant advance in computer-memory technology."

## NANO PRESS

What nano-centered publications are reporting

### [Carbon Nanotubes Boost Cancer-Fighting Cells](#)

April 20, 2010

Meridian Institute

"Researchers at Yale University, United States, have found that defects in carbon nanotubes cause T cell antigens to cluster in the blood and stimulate the body's natural immune response. The findings could improve adoptive immunotherapy, a cancer treatment that involves extracting the blood of a cancer patient so that the number of naturally occurring T cells can reproduce more effectively in the laboratory, and then transferring the blood back to the patient."

### [Magnetic Fields Drive Drug-Loaded Nanoparticles to Reduce Blood Vessel Blockages in an Animal Study](#)

Nanotechnology-Now.com

April 20, 2010

"Scientists and engineers have used uniform magnetic fields to drive iron-bearing nanoparticles to metal stents in injured blood vessels, where the particles deliver a drug payload that successfully prevents blockages in those vessels. In this animal study, the novel technique achieved better results at a lower dose than conventional non-magnetic stent therapy.

Conducted in cell cultures and rats, the research is the latest in a series of studies at The Children's Hospital of Philadelphia demonstrating the feasibility of magnetically guided nanoparticles as a new delivery platform for a variety of possible therapeutic cargos: DNA, cells and drugs. The findings may set the stage for a new medical tool, called vascular magnetic intervention."

*Also noted in [R&D Magazine](#) (4/21/10)*

### [Carbon nanotube composite holds promise for bionics](#)

Nanowerk

April 22, 2010

"Mimicking the human nervous system for bionic applications could become a reality

with the help of a method developed at Oak Ridge National Laboratory (ORNL) to process carbon nanotubes.

"While these nanostructures have electrical and other properties that make them attractive to use as artificial neural bundles in prosthetic devices, the challenge has been to make bundles with enough fibers to match that of a real neuron bundle. With current technology, the weight alone of wires required to match the density of receptors at even the fingertips would make it impossible to accommodate. Now, by adapting conventional glass fiber drawing technology to process carbon nanotubes into multichannel assemblies, researchers believe they are on a path that could lead to a breakthrough. "

#### [Microfluidic integrated circuit could help enable home diagnostic tests](#)

Nanowerk

April 23, 2010

"As a way to simplify lab-on-a-chip devices that could offer quicker, cheaper and more portable medical tests, University of Michigan researchers have created microfluidic integrated circuits.

Just as electronic circuits intelligently route the flow of electricity on computer chips without external controls, these microfluidic circuits regulate the flow of fluid through their devices without instructions from outside systems.

A paper on the technology is newly published online in *Nature Physics*."

#### [Is there a micro-supercapacitor in your future? Don't bet against it](#)

Nanowerk

April 23, 2010

" 'Just think how often your fancy new mobile phone or computer has become little more than a paperweight because the battery lost its zeal for doing its job,' says John Chmiola, a chemist with the Lawrence Berkeley National Laboratory (Berkeley Lab). 'At a time when cellphones can do more than computers could do at the beginning of the Clinton presidency, it would be an understatement to say that batteries have not been holding up their end of the mobile device bargain.'

Chmiola is a staff scientist in the Advanced Energy Technologies Department of Berkeley Lab's Environmental Energy Technologies Division. His research is aimed at addressing this problem of relatively short-lived portable energy storage devices. Chmiola believes he has found a solution in electrochemical capacitors, which are commonly referred to as 'supercapacitors' because of their higher energy storage densities than conventional dielectric capacitors and higher abuse tolerance than batteries."

### [Food Nanotechnology: New Leverage against Iron Deficiency](#)

Meridian Institute

April 26, 2010

Dennis D. Miller

"A new study, conducted by researchers at ETH Zurich and the University of Zurich, Switzerland, has shown that reducing the particle size of some iron compounds can improve their bioavailability in rats, without causing significant changes in color or odor when added to foods. More than two billion people around the world suffer from iron deficiency, primarily due to low dietary intake, intestinal parasites and menstrual blood loss, impairing work performance, leading to poor pregnancy outcomes and damaging cognitive development in children."

### [Meaningful nanotechnology EHS research requires independent nanomaterial characterization](#)

Nanowerk

April 27, 2010

Michael Berger

"One of the key issues in the young field of nanotoxicology is the lack of standards and definitions. Although there have been some international efforts like the International Alliance for NanoEHS Harmonization (which since its inception in 2008 and an initial January 2009 newsletter, hasn't posted much on its website, though) there still is no coherent international approach to determining if and what risks are posed by what kind of nanotechnology materials. At the core of the problem are the serious challenges that are created when comparing test results and drawing conclusions without adequate standardization and nanomaterial characterization."

### [Russia Commissions First Nanotechnology Plant](#)

Nanowerk

April 27, 2010

"Russia's first nanotechnological plant for the production of monolithic carbide-tipped tool with multiple nano-structured coating has been commissioned in the town of Rybinsk, Yaroslavl region.

Russian Deputy Prime Minister Sergei Ivanov and Chairman of the Russian State-Run Corporation of Nanotechnologies (ROSNANO) Anatoly Chubais attended the opening ceremony on Monday."

### [The Future of Molecular and Supramolecular Devices](#)

Azonano

April 28, 2010

Paul Weiss

"Designing, synthesizing, assembling, operating, and measuring molecular devices give us the ability to study the ultimate limits of function. We seek to understand the rules and limits associated with such devices given that we are able to know the precise positions and connections of all the atoms in the entire system. Experiments, theory, and simulations are used in concert to this end."

### [CNT membranes improve filtering, catalysis](#)

ElectrolQ (Small Times)

April 28, 2010

" Researchers from the US and Europe say they have created devices with carbon nanotube (CNT) that can act as membranes for air filters far more effective than current ones.

The showerhead-resembling devices were created by chemical vapor deposition (CVD) of silicon dioxide templates, with laser-created holes; after 30min in the furnace the holes fill up with carbon nanotubes, through which only nanoscale objects can pass.

### [Nanotechnology and the future of advanced materials](#)

Nanowerk

April 29, 2010

"A European project has completed an extensive five-year study of the needs and opportunities for coordinating future research and development in nanomaterials science and nanotechnology for the advancement of technologies ranging from communication and information, health and medicine, future energy, environment and climate change to transport and cultural heritage. Based on the collaborative work of more than 600 experts from all over the world, the project has compiled an overall picture of the present and future developments in the large spectrum of nanomaterials. Although one of the foci was to highlight the important roles of advanced analytical equipment at European research infrastructures, especially at synchrotron radiation, laser and neutron facilities, the 500-page project report provides an excellent overview of the nanomaterials revolution that is upon us."

### [The strange new world of nanotechnology](#)

Nanowerk

April 29, 2010

"If you are looking for a good introduction to nanotechnology, this video from Cambridge University, nicely narrated by Stephen Fry, will do the job. " [Includes imbedded YouTube video link.]

### [Sensor predicts glass breakage](#)

Nanowerk  
May 1, 2010

"Modern glass façades inform the architecture of major cities throughout the world. In recent years, however, there have been cases of broken glass, with collapsing façades endangering passers-by. Now, a special sensor can detect micro-fissures and warn of impending breakage beforehand."

[New nanocoating ensures a perfectly non-reflecting view on displays](#)

Nanowerk  
May 1, 2010

"A new nanocoating ensures a perfectly non-reflecting view on displays and through eyeglasses. The necessary surface structure is applied to the polymeric parts during manufacture, obviating the need for a separate process step. The hybrid coating has further advantages: the components are scratch-proof and easy to clean."

[Other science issues related to nanotechnology](#)

[Materials research advances reliability of faster 'smart sensors'](#)

EurekAlert  
April 20, 2010

"In military and security situations, a split second can make the difference between life and death, so North Carolina State University's development of new "smart sensors" that allow for faster response times from military applications is important. Equally important is new research from NC State that will help ensure those sensors will operate under extreme conditions - like those faced in Afghanistan or elsewhere."

[Samsung Rolls Out New Top Mount Refrigerators](#)

Channel News.com (Australia)  
April 21, 2010

". . . In addition, the new refrigerator models will also incorporate Samsung's Silver Nano Health System. By coating the walls and doors of the refrigerator with silver nano ions, Samsung's Silver Nano Health System helps reduce airborne bacteria."

[Crystal defect shown to be key to making hollow nanotubes](#)

PhysOrg  
April 22, 2010

Scientists have no problem making a menagerie of nanometer-sized objects -- wires, tubes, belts, and even tree-like structures. What they sometimes have been unable to

do is explain precisely how those objects form in the vapor and liquid cauldrons in which they are made.

Now a team led by University of Wisconsin-Madison chemist Song Jin, writing this week (April 23, 2010) in the journal *Science*, shows that a simple crystal defect known as a "screw dislocation" drives the growth of hollow zinc oxide nanotubes just a few millionths of a centimeter thick."

### [MU researchers show potential for new cancer detection and therapy method](#)

Eurekaalert  
April 22, 2010

"University of Missouri School of Medicine scientists explain a potentially new early cancer detection and treatment method using nanoparticles created at MU in an article published in the *Proceedings of the National Academy of Sciences*. The article illustrates how engineered gold nanoparticles tied to a cancer-specific receptor could be targeted to tumor cells to treat prostate, breast or lung cancers in humans.

'When injected into the body, the Gastrin Releasing Peptide (GRP) cancer receptor serves as a signaling device to the gold nanoparticle, which allows for targeted delivery to the tumor site,' said Kattesh Katti, PhD, who wrote the article with Raghuraman Kannan, PhD. 'Consequently, the radiotherapeutic properties of such nanoparticles also provides valuable imaging and therapeutic tools that can be used for early cancer detection and therapy in various human cancers.' "

### [Nanofibers Carry Toxic Peptides Into Cancer Cells](#)

PhysOrg  
April 22, 2010

"Researchers have long known that certain peptides are capable of killing cells by inserting themselves into the cell membranes and disrupting normal membrane structure and function. Now, researchers at Northwestern University have learned how to deliver these cytotoxic peptides to tumor cells using self-assembling nanofibers that can slip into cancer cells and allow the toxic peptides to do their job from inside the cell .

. .

To create their nanofibers, the researchers first synthesized molecules called peptide amphiphiles. These molecules fold into sheet-like structures that have one water-seeking, or hydrophilic, side and one water-avoiding, or hydrophobic side. When mixed in solution, this peptide self-assembles into long, nanometer-thin fibers. When the

cytotoxic peptide was attached to one end of the peptide amphiphiles, it ended up decorating the surface of the fiber."

### [The Profitable World of Targeted Drug Delivery](#)

HoweStreet.com

April 22, 2010

Patrick Cox

"In the classic 1966 science fiction movie *Fantastic Voyage*, a submarine equipped with medical devices was miniaturized to create a tiny, nanotech vessel. The fictional submarine, named *Proteus*, transported scientists through the human body to repair a blood clot in an important diplomat's brain.

Today, researchers are working on nanotechnologies that do essentially the same thing, though without a miniaturized Raquel Welch. Like the fictional craft *Proteus*, however, these remarkable 'nanovesicles' can travel to specific sites in the body to deliver lifesaving therapies."

### [Recycling nanoparticles](#)

The Engineer (U.K.)

April 22, 2010

"Some nanoparticles are more precious than gold, so being able to recycle them would offer manufacturers important cost savings.

Now, Prof Julian Eastoe at Bristol University and his colleagues have developed a special type of microemulsion - a mixture of oil and water - that may make it easier for manufacturers to recover, recycle, and reuse nanoparticles.

In laboratory tests using cadmium and zinc nanoparticles, they demonstrate how the oil and water in the microemulsion separated into two layers when heated. One layer contained the nanoparticles that could be recovered and the other contained none."

### [Draft Californian study addresses policy and risk assessment implications of nanomaterials](#)

Chemical Watch

April 23, 2010

"The University of California San Francisco's (UCSF) Program on Reproductive Health and the Environment (PRHE) has released a draft report called *A Nanotechnology Policy Framework: Policy Recommendations for Addressing Potential Health Risks from Nanomaterials in California*."

### [Nano composite could turn car bodies into batteries](#)

Plastics & Rubber Weekly

April 23, 2010

Keith Nuthall

"A carbon fibre and polymer resin composite is being developed by a [Euro] 3.4m research project headed by Volvo and Imperial College, London, that would not only serve as a light and durable car body material, but also as an engine battery.

The Storage project will take three years to develop the composite, used in doors, roofs and flooring (notably the spare wheel well), and which would be recharged overnight from the mains. The material would reduce the size of hybrid car batteries and also the weight of a car, making them run further on electric charges."

### [COSMETIC ALERT! Why You Should Dump These Cosmetics Today...](#)

Food Consumer.org

April 24, 2010

". . . Dr. Epstein has serious concerns about cosmetic products containing nano-particles, and that the facts about these technologies are being hidden and ignored.

These ingredients are used in many different brands of cosmetics and cosmeceuticals, so I encourage you to use this information to evaluate ANY type of cosmetic you're considering buying.

Some of these nano-particles are so dangerous, in fact, they're slowly but surely becoming known as 'universal asbestos.' "

### [Carbon Nanotubes and Other Nanomaterials Used to Make Wearable Artificial Kidney for Hemodialysis and Peritoneal Dialysis](#)

Before It's News.com

April 25, 2010

"Dutch Organization for Applied Scientific Research - TNO (Delft, NL) scientists have developed wearable artificial kidneys and dialysis systems. The patent pending devices use a combination of nanomaterials including carbon nanotubes to remove toxic substances from a patient's blood. The devices contain filter pads of nanomaterials suitable for use in hemodialysis and peritoneal dialysis systems. The sorption and

release system has a temporary use till it reaches its maximum capacity. The content of the sorption and release system can be customized to the individual patient needs."

### [Novel Nanoparticles Prevent Radiation Damage](#)

Science Daily

April 26, 2010

"Tiny, melanin-covered nanoparticles may protect bone marrow from the harmful effects of radiation therapy, according to scientists at Albert Einstein College of Medicine of Yeshiva University who successfully tested the strategy in mouse models. Infusing these particles into human patients may hold promise in the future.

The research is described in the current issue of the *International Journal of Radiation Oncology, Biology and Physics*."

### [Physicists Capture First Images of Atomic Spin](#)

Science Daily

April 26, 2010

"Though scientists argue that the emerging technology of spintronics may trump conventional electronics for building the next generation of faster, smaller, more efficient computers and high-tech devices, no one has actually seen the spin -- a quantum mechanical property of electrons -- in individual atoms until now . . .

The researchers used a custom-built microscope with an iron-coated tip to manipulate cobalt atoms on a plate of manganese. Through scanning tunneling microscopy, the team repositioned individual cobalt atoms on a surface that changed the direction of the electrons' spin. Images captured by the scientists showed that the atoms appeared as a single protrusion if the spin direction was upward, and as double protrusions with equal heights when the spin direction was downward."

Also noted by [UPI](#)

### [ILO warns of new health risks with changing labour patterns](#)

Earth Times

April 27, 2010

"Changes to traditional labour models have reduced some risks in the workplace but

created new ones that have yet to be fully understood, according to a new study released Tuesday by the International Labour Organization.

Nanotechnology, biological risks and biotechnology, health services, and industries using chemicals are among the relatively new sectors and areas with large growth that do not have full safety and prevention systems associated with them.

### ['Tissue Paper' Could Stop Bullets, Harness Solar Energy](#)

Discovery News  
April 28, 2010  
Eric Bland

"A soft 'tissue paper' made from normally brittle germanium and silicon contains individual fibers as strong as bulletproof Kevlar. Woven into traditional fabric or embedded in hard plastics, the new nanowires could stop bullets, harvest solar energy or perform dozens of other tasks.

'Paper is made of wood fibers compressed together,' said Brian Korgel, a scientist at the University of Texas at Austin and co-author of a new paper in *ACS Nano* that describes the germanium nanowires. "In this case, we took bulk semiconductors, turned them into nanowires and compressed them together to make a material with a tissue paper consistency."

### [Superheated nanodroplets for contrast-enhanced tumour imaging](#)

PhysOrg  
April 28, 2010

"Michel Versluis and Nico de Jong of Detlef Lohse's Physics of Fluids research group at the University of Twente were granted [Euro] 350,000 in the FOM Projectruimte. The grant is intended for research into a new contrast agent for tumour imaging using ultrasound.

The grant has been awarded in the FOM Projectruimte, which issues grants to applicants who conduct innovative, cutting-edge fundamental research in the field of physics. The proposed research must be of high quality and address urgent scientific, industrial or societal needs."

### [States Call to Reform TSCA](#)

BLR.com  
April 29, 2010

"Oregon has joined 12 other states in calling on EPA to reform TSCA. The states have set forth eight principles they think should be incorporated . . ."

[Tiny particles may help surgeons by marking brain tumors](#)

EurekAlert  
April 29, 2010  
Jessica Winter

"COLUMBUS, Ohio - Researchers have developed a way to enhance how brain tumors appear in MRI scans and during surgery, making the tumors easier for surgeons to identify and remove.

Scientists at Ohio State University are experimenting with different nanoparticles that they hope may one day be injected into the blood of patients and help surgeons remove lethal brain tumors known as glioblastomas.

In the journal *Nanotechnology*, researchers reported that they have manufactured a small particle called a nanocomposite that is both magnetic and fluorescent. These nanocomposites measure less than twenty nanometers in size (a nanometer is one billionth of a meter). One sheet of paper, for example, is about 100,000 nanometers thick."

[Purple Pokeberries hold secret to affordable solar power worldwide](#)

EurekAlert  
April 29, 2010

"Pokeberries - the weeds that children smash to stain their cheeks purple-red and that Civil War soldiers used to write letters home - could be the key to spreading solar power across the globe, according to researchers at Wake Forest University's Center for Nanotechnology and Molecular Materials.

Nanotech Center scientists have used the red dye made from pokeberries to coat their efficient and inexpensive fiber-based solar cells. The dye acts as an absorber, helping the cell's tiny fibers trap more sunlight to convert into power."

[NIST Funding for Nano-Particle Casting Technology Shows Potential for High Strength Low Weight Aluminum Alloys](#)

Metal Miner.com

April 29, 2010

"A fascinating new manufacturing concept incorporating the use of ceramic nano particles into the melt of aluminum and magnesium alloys could revolutionize the production of high strength low weight components used in a wide range of transport and defense products. So attractive is the new technology, that the National Institute of Standards and Technology (NIST) awarded \$10.1 million to the team headed by the University of Wisconsin-Madison to further develop the technology."

#### [Treated fabrics exposed to faux sweat release silver nanoparticles](#)

Environmental Health News

April 30, 2010

"Researchers find that fabrics laced with silver nanoparticles designed to limit bacterial growth release those particles when the fabric is exposed to artificial human sweat. The findings raise questions about human exposure to the small particles through skin absorption."

#### [Ominous Nano Findings Win a NIOSH Award](#)

Occupational Health & Safety

April 30, 2010

"Among the 2010 winners and honorable mentions for the Alice Hamilton Award announced Wednesday is a paper published last month in Toxicology that found mice exposed to multi-walled carbon nanotubes quickly suffered lung damage."

#### [Can Nanotechnology Help with the Oil Spill in the Gulf?](#)

Discovery News

May 3, 2010

Dexter Johnson

"When I saw the initial news reports on the oil spill in the Gulf of Mexico, after I shook my head in despair for that region already struck by Hurricane Katrina just five years ago, I thought of how long it would take for people to turn to nanotechnology for a possible solution to clean up the mess.

I guess I wasn't the only person to think this as the blog Nanopatents and Innovations pulled out at least four patents and/or innovations in nanomaterials that address the cleanup or remediation of oil spills.

Now as anyone who is familiar with how technologies are developed knows it is a far cry

from securing a patent to getting it do something in the real world."

### [Caltech Team Attacks Tumors with Nanotechnology](#)

GenomeWeb.com

May 3, 2010

"A team of researchers from the California Institute of Technology recently provided the first evidence that targeted nanoparticles can be used safely and effectively in the clinic. Led by Mark Davis, a professor of chemical engineering at Caltech, the researchers demonstrated a method in which small siRNA strands are packaged into a self-assembling nanoparticle, constructed of polymers, that then delivers the siRNA strands to the tumor and turns off a critical cancer gene. The nanoparticles can be directly injected into a patient's bloodstream and then expelled through urine. The team also provided the first evidence that this new type of approach can treat human tumors in a dose-dependent fashion, since a higher number of nanoparticles introduced into the body results in a higher number of nanoparticles in the tumor cells."

### The Humorous, Fascinating & Unique

#### [Cake takes center stage at nanotechnology talk](#)

NanoScienceWorld - Nano Blog

Aarti Kapoor

"There is a Spanish proverb that says 'the belly rules the mind'. So for all you food lovers out there, if you're having trouble digesting the complex science behind the nanotechnology phenomenon, Dr. Andrew Maynard, director of the Risk Science Center at the University of Michigan School of Public Health, seems to have the answer.

In a rather entertaining talk (see video in his [blog post](#)) given last Saturday at the National Museum of American History in Washington, D.C. as part of NanoDays 2010, Maynard drew several interesting comparisons between (believe it or not), baking a cake and nanotechnology. And yes, you read that right - the cake really did take center stage that afternoon."

#### [New nano-tool mimics mythical reptile](#)

Gizmag.com

April 20, 2010

Ben Coxworth

"The Ouroboros is an ancient symbol, which depicts a serpent or dragon curled in a circle, swallowing its own tail. Chemists at The Scripps Research Institute (TSRI) in California have now created a nano-tool, that they named after the curious beast. Their ourobora molecular switch looks kind of like the Ouroboros, in that its tail coils up and around into its cup-like head. Unlike the reptile, however, the molecule could be used to detect metals, toxins, and other pollutants in our environment."

### [H'wood Studio Book-Buying In Downward 'Spiral'; Dealmaking Room For Producers](#)

Deadline.com

April 20, 2010

Mike Fleming

"Chockstone Pictures partners Steve and Paula Mae Schwartz have teamed with Nick Wechsler to acquire screen rights to *Spiral*. They and other monied producers are snapping up books studios used to buy . . .

Studios are content to let those producers invest the development sweat and then pay a premium for fully-formed packages ready to go into production. That has opened the door for new players like Steve and Paula Mae Schwartz with *Spiral*, a nanotechnology thriller novel written by Cornell professor Paul McEuen that will be published March 2011 by Random House imprint Dial Press . . .

Studio scouts counter that they evaluated *Spiral* as a partial manuscript and again when it was completed and lit agent Jane Gelfman set the publishing deal. The themes and suspense were offset by the fear that the nanotechnology storyline was too comparable for comfort to *Prey*."

### [Nanotechnology's road to artificial brains](#)

Nanowerk

April 23, 2010

"If you think that building an artificial human brain is science fiction, you are probably right - for now. But don't think for a moment that researchers are not working hard on laying the foundations for what is called *neuromorphic engineering* - a new interdisciplinary discipline that includes nanotechnologies and whose goal is to design artificial neural systems with physical architectures similar to biological nervous systems.

One of the key components of any neuromorphic effort is the design of artificial synapses. The human brain contains vastly more synapses than neurons - by a factor of about 10,000 - and therefore it is necessary to develop a nanoscale, low power, synapse-like device if scientists want to scale neuromorphic circuits towards the human brain level."

[Nanotechnology-Vascular Approach for Brain-Machine Interface](#); Millions of Nanowires  
Create Secure, Robust and Minimally Invasive Connection  
Before It's News.com  
April 30, 2010  
Alton Parrish

"New York University (New York, NY) and Massachusetts Institute of Technology (Cambridge, MA) scientists in U.S. Patent Application 20100106259 disclose conducting polymer nanowires and methods for their use in a brain-machine interface which is secure, robust and minimally invasive.

A vascular-based brain-machine interface comprising conducting polymer nanowires is disclosed by a inventors, Rodolfo R Llinas (New York, NY), Ian W. Hunter; (Cambridge, MA) and Bryan P. Ruddy (Somerville, MA). The brain-machine interface is based on a nanotechnology/vascular approach which they have developed. The interface has the advantage of being retrievable in that the nano-scale conducting polymer electrodes are small enough so that even with a large number of electrodes (millions), the interface can be removed without violating the integrity of the brain."