Dan Rogers

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Sent: Tuesday, April 05, 2005 8:35 AM
To: Dan Rogers
Subject: NanoExpress - April 2005

Providing information on technological advances, applications, and business news to nanotechnology professionals across the globe

Vol. 18 **April 2005**

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- **Nano World: Water, water everywhere nano**

By Charles Q. Choi

UNITED PRESS INTERNATIONAL, Published March 18, 2005

NEW YORK -- One of the single biggest applications of nanotechnology could be solving the global shortage of pure water, experts told UPI's Nano World.

"It's the new oil of the 21st century," said F. Mark Modzelewski, managing director of nanotechnology analyst firm Lux Research in New York.

Fresh water is one of the largest industries in the world, behind only oil and electricity. Some 70 percent of the water market goes to agriculture and 15 percent to industry, Modzelewski said.

"The current size of the global water market is $287 billion right now, and expected to be $413 billion by 2010," he added. "It takes an incredible 105,000 gallons of water to make a single automobile and extraordinary amounts are used for making everything from clothing to semiconductors."

More than 97 percent of the water in the world is

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NanoExpress Masthead

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saltwater, and of the remaining freshwater supply, only about a third is usable, with the rest locked up as ice, Modzelewski said. At the same time, the world population is expected to double in 40 years.

"Over half the world population will face a very serious water shortage in the next 30 to 50 years, and we need to be prepared for that," said Zvi Yaniv, president and chief executive officer of Applied Nanotech in Austin, Texas. "Water will be one of the biggest applications of nanotechnology in the near term."

To Read Entire Interview, Please Click Here

- **Nano-technology to Improve Quality of Life**

Times News Network

THIRUVANANTHAPURAM: Macro 2004, the three-day international conference on polymers for advanced technologies organized by Society for Polymer Science, India concluded here on Friday with a call for more research into several emerging areas of polymer science and technology.

Dr K.N.Ninan, Dy Director, VSSC and Chairman of the Local Organising committee of the conference said that some of the in polymer science and technology to be focused in the next three years and of immediate relevance to country was also identified during Macro 2004. The scientific sessions proved to be a good platform for exchange of ideas between the senior scientists and young scientists in the field, he added.

Nano-composites is providing new technologies and business opportunity for aerospace, electronics and biotechnology applications, according to K.G.Satyanarayana of Federal University of Parana, Brazil. In his plenary lecture on the concluding day, Dr Satyanarayana said that the challenge before the scientific community is to evolve materials with highly consistent properties that will remain stable during storage and transportation. Dr Satyanarayana said that plant or crop based polymers do not have consistent properties although it is eco-friendly. Nano-materials will have a high impact on the improvement of quality of life in the coming years, he said.

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- **Nanotechnology: Scientists Pin Big Hopes on a Small Scale**

By Leonard David, Senior Space Writer

BOULDER, Colo. -- Nanotechnology, which is being developed for use in a number of industries, may have large payoffs for space applications and exploration missions.

Current nanotechnology research aims to create functional materials, devices and systems from tiny building blocks that are 1 to 100 nanometers across. A nanometer is one billionth of a meter, or about one ten-thousandth the diameter of a human hair. Scientists expect to be able to exploit a host of intriguing phenomena and properties -- physical, chemical, biological, mechanical, electrical -- by working with objects on so minuscule a scale.

"There is definite progress being made," said Meyya Meyyappan, director of the Center for Nanotechnology at the NASA Ames Research Center, Moffett Field, Calif. From the basic research five or six years ago, he said, "we have actually started making some widgets."

A compact chemical sensor using carbon nanotubes has been fabricated. Such a device would be ideal for use in NASA's cosmochemistry missions, Meyyappan said. Also, a carbon nanotube-based X- ray defraction spectrometer has been made, he said, a unit that offers higher performance than commercially available instruments while using less power and being far smaller and lighter. "It actually fits within my palm, and I'm a small guy," Meyyappan noted. "It should be ready for missions in 2009-2010, and we're shooting for Mars exploration - to study the rocks and soil."

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- **Nano Chip Research In Austin**

Source: KXAN36 Austin

As computers get smaller and more powerful, we're using them in ways no one would have thought of just a few years ago. New developments in memory chip technology may soon push computing light years ahead, and it's happening here in Austin.

There's a famous quote saying that as technology advances, the more it seems like magic. If the research underway in Central Texas proves fruitful, it will be hard to tell the difference between computing and magic.

Research at a north Austin company promises to truly revolutionize computing. Building on knowledge from University of Texas labs, Applied Nanotech is developing the ultimate memory chip. At its heart, a special class of molecules called porphyrins.

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- **Dow and GE use Nanocomposites for Car Parts**

By David Vink, Plastics & Rubber Weekly (www.prw.com)

16 March 2005 - GE Advanced Materials and Dow Automotive have both developed nanocomposite technologies for online painted vertical body panels.

The companies have also looked at composite solutions for horizontal panels and structural cladding, they announced independently at last week's VDI plastics in automotive engineering conference in Germany.

For online painting, both companies are using unspecified nano-sized mineral fillers to meet automotive industry needs for online painted vertical body panels with stiff but ductile materials. These have lower coefficients of thermal expansion to enable narrow gap designs and low water absorption, thereby avoiding paint blistering during oven curing at 200°C.

Dow uses CBT (cyclic butylene terephthalate) from Cyclics for its polymer base, as an intrinsically low moisture absorption polymer. It has an exclusive deal to develop and market CBT in the automotive industry. GE has brought nanotechnology fillers to a HMD (high modulus and ductility) version of its Noryl PPE/PA blend for online painting, as well as to its Cycoloy PC/ABS and Xenoy PC/PBT blends for offline painting.

Further details of these developments will appear in the forthcoming April issue of *European Plastics News*

- **Investing In Nano: Venture Capitalists Tell Their Side Of The Story**

Source: Small Times

Micro and nanotech have many supporters, yet few put their money where their mouth is quite like venture capitalists. Four veteran VCs recently took a break from doling out dollars, and put their due diligence to work on a few questions posed by Jeff Karoub. They are Mark Brandt, managing partner of the Maple Fund, Jeff Fagnan, partner at Atlas Venture, Matthew McCall, partner at Portage Venture Partners, and Waqar Qureshi, vice president at Chevron-Texaco Technology Ventures' Molecular- Diamond Technologies.

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During the first three quarters of 2004, investors put $122 million into nanotechnology companies, leaving the sector on track to fall far short of the $301 million invested in 2003. However, the number of deals has remained fairly consistent. What is your take on the trend?

To Read This Article in Small Times, Click Here

- **Light bulb Startup Finds Good Business Environment at Minnesota Incubator**

Source: Saint Paul Pioneer Press (St. Paul, Minn.)

If you're a start-up company looking to invent a better light bulb, what better place to move to than an incubator project called Menlo Park?

In January, InnovaLight, which is developing what it calls "silicon nanocrystals," moved into Menlo Park, a St. Paul, Minn., incubator for biotech and high-tech start-ups. The building's owner named the complex - an old crime lab - after the famous Menlo Park laboratories of Thomas Edison, the inventor of the light bulb.

Turns out, the name was not a factor in the move.

"It's totally ironic," said Paul Thurk, the chief executive of InnovaLight. "It never occurred to me until we moved in."

Rather, InnovaLight was attracted to the resources of the University of Minnesota, which has a national expertise in nanotechnology, or engineering at the molecular level, with specks called nanoparticles that are measured in terms of billionths of a meter. Even common materials such as silicon -- the basic ingredient in sand -- perform differently when they broken down into ultra-tiny pieces.

To Read Entire This Article on the Small Times Site, Click Here

- **HP Unveils Plans to Replace Silicon with Nanotechnology**

By Patrick Norton, ExtremeTech

March 15, 2005

Today HP revealed its strategy for the future of computing, replacing silicon processors with nanotechnology, in a series of papers presented in Applied Physics.

Stan Williams, HP Senior Fellow and director, Quantum Science Research (QSR), HP Labs said "We believe we have a practical, comprehensive strategy for moving computing beyond silicon to the world of molecular-scale electronics."

The collection of papers that outline HP's plan were published in a special nanotechnology edition of Applied Physics, a European scientific journal.

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- **Nanotechnology Colloquium Series**

A cutting-edge educational series presenting and discussing issues related to the development, application and commercialization of nanotechnology, held every other Monday at the offices of Winstead Sechrest & Minick, P.C.

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- Winstead Sechrest & Minick P.C.
- Nanomaterials Applications Center
- Texas State University - San Marcos

For Information on Upcoming and Past Events, Please Click Here

- **Nanotechnology, MEMS and Microtechnology Information Powerhouse Launches Research Division**

Ann Arbor, Mich., March 22, 2005 - Small Times Media, the most highly regarded provider of business information in the emerging fields of nanotechnology, MEMS and microtechnology, announces the formation of a new division focused solely on market research: EmTech Research (www.emtechresearch.com).

"Small Times Media has been executing custom market research projects for companies and key government agencies for the past three years," said Small Times Media CEO Patti Glaza. "The demand for our analytical services was so strong that we decided to launch a separate division to answer those needs."

Heading the new division is recently hired Marlene Bourne, an internationally acclaimed MEMS and emerging technology market analyst.

"The ability to leverage my market research expertise in conjunction with Small Times Media's extensive database is very exciting, and will result in an unmatched information resource for the emerging technology marketplace," said Vice President of Research and

Principal Analyst Marlene Bourne. "Companies looking for accurate, comprehensive and reliable business intelligence as it pertains to nanotechnology, MEMS and microtechnology will find it at EmTech Research."

To Read this Press Release, Click Here

- **West Texas Nanotechnology Forum to Highlight Region's Newest Technologies**

The Office of Technology Transfer and Intellectual Property of the Texas Tech University System invites you to join us for the West Texas Nanotechnology Forum on April 19th at the United Spirit Arena in Lubbock. We encourage you to attend and participate in Lubbock's first nanotechnology forum designed specifically to showcase the region's most promising available technologies for commercialization.

The West Texas Nanotechnology Forum will feature eight of the region's best nanotechnology prospects for venture capital investment. The technology, ranging from bulk explosives production and controllability to semiconductor nanowires development, extends through several colleges and departments and is coordinated primarily through the Nano Tech Center through the College of Engineering. Other areas include a focus on bioengineering and the application of nanotechnology in the healthcare industries.

Co-hosts of the West Texas Nanotechnology Forum are Texas Nanotechnology Initiative, Texas Tech University College of Engineering, Lubbock Regional BioScience Initiative, Texas Healthcare and Bioscience Institute and Technopolis Xchange. And the event is sponsored by Emergent Technologies, Bayer CropScience and FiberMax, Parkhill, Smith & Cooper, Inc., BlabberMouth PR, and McCleskey, Harriger, Brazill & Graf, L.L.P.

To register or for more information about the West Texas Nanotechnology Forum, please call LeeAnn Richardson at 806-723-8246.