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Center for Nanotechnology in Society

University of California, Santa Barbara

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WEEKLY CLIPS

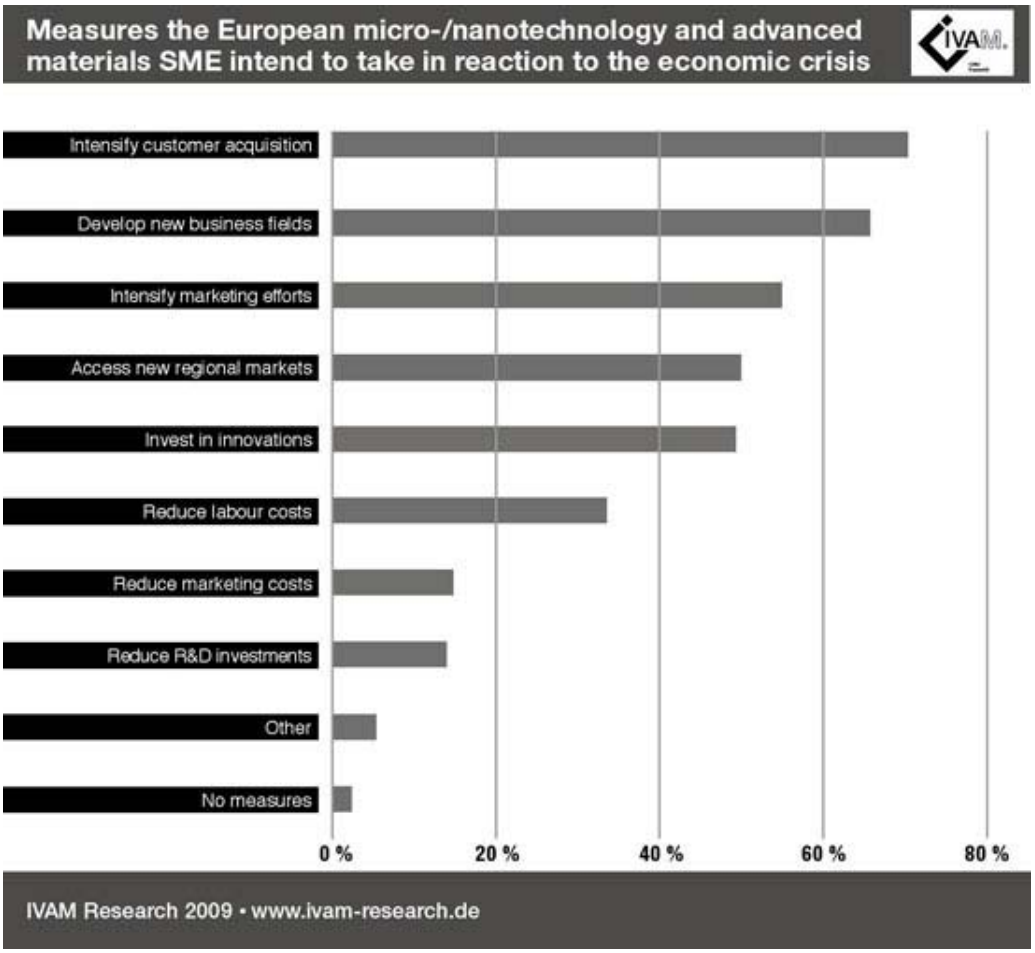
April 7 – April 13, 2009

Posted: April 14, 2009

Micro, nanotechnology and materials industry reacts to economic crisis in a constructive way

(*Nanowerk News*) The European micro, nanotechnology and materials enterprises intend to react to the general economic crisis mostly with constructive measures. Almost 70 percent of the companies intend to intensify their efforts to acquire new customers; more than 65 percent want to develop new business fields.

This is a result of a survey IVAM Research has conducted in February among 2,300 enterprises and institutes involved in microtechnology, nanotechnology and advanced materials in Europe.



IVAM will present the results on April 23 during the HANNOVER MESSE on the forum “Innovations for Industry”, which is part of the MicroTechnology exhibition in hall 6. Other measures against the crisis taken by the mostly small and medium-sized enterprises are to intensify marketing efforts, to access new regional markets and to invest in innovations. The industry does, however, not get around cutting costs: almost 35 percent of the enterprises consider reducing labour costs, while 14 percent want to reduce investments in research and development.

Almost half (47 percent) of the responding small and medium-sized high-tech enterprises were affected by the economic crisis in 2008, mostly by a decrease in orders (78.4 percent) and a decrease in sales (63.6 percent). Prognoses are worse for 2009, when more than two thirds of the enterprises anticipate negative effects on their business development.

Export share steady – staff development static

The global economic crisis has had no drastic effects on the export share of the European microtechnology, nanotechnology and advanced materials industry in 2008, which remained steady compared to previous years. Altogether, almost 50 percent of the small and medium-sized enterprises have gained at least half of their annual sales with export in 2008. The USA is still the major export country of the European industry. Half of the companies say that their total sales have increased in 2008, while 20 percent report a decrease in sales. For the current business year, even 28 percent of the respondents anticipate a decrease in sales.

http://www

.nanowerk.com/news/newsid=10073.php

The New York Times

Researchers look to make 'messy' nanotech production 'clean and green'

By SARA GOODMAN, _

Published: April 13, 2009

Nanotechnology's image is sleek, modern and clean. But that's not its reality.

Turns out that designing and manufacturing materials so small that 100,000 of them can fit comfortably on the width of a hair strand absorbs tremendous amounts of energy and is anything but neat.

"You can make a very green product with a very messy process," said Mark Greenwood, a Washington lawyer and former director of U.S. EPA's Office of Pollution Prevention and Toxics.

That "very messy process" is a problem for nanotech researchers trying, among other things, to design more efficient batteries, higher-performing solar cells, more effective water purifiers and more sensitive pollution detectors.

Consider what it takes to purify a nanomaterial of unwanted chemicals. Traditionally, that has required the repeated use of solvents -- a lot of them, said James Hutchison, a professor at the University of Oregon.

"If you're washing with a solvent, you're wasting a lot of solvent," Hutchison said. "This is the biggest contribution to waste we've been able to see. If you think about a lifecycle analysis on this, you see what's the hot spot, and think about other ways to purify that don't require solvent."

http://www.nytimes.com/gwire/2009/04/13/13greenwire-nows-the-time--to-make-th

Posted: April 14, 2009

Russia's large-scale project in the field of nanotechnology education

(*Nanowerk News*) By the end of 2008 NT-MDT Co. fulfilled the commitments of delivery of NanoEducator scientific training laboratories for 35 educational organizations in the Russian Federation. The deliveries were carried out in accordance with the Government contracts of the Ministry of education and science of the Russian Federation. Most of the classes already issued first students.

The scientific training laboratory developed by NT-MDT is a class equipped with several sets of training Scanning Probe Microscopes NanoEducator. In the process of training the students learn the practical basis of nanotechnology. All the microscopes in the class are networked. The networking allows a teacher to monitor and control the process of investigation of nanosized objects by a student in the class with high comfort and educational level.

An important feature of the NanoEducator is the ready-to-start concept. In addition to microscopes and computers the training laboratory includes a kit of tools to prepare cost effective probes, a set of test samples, textbook on principles of SPM spectroscopy and nanolithography, recommended laboratory courses, etc. So it is not surprising that most of the classes installed in November 2008 issued first students already in March 2009!

As of today more than 70 scientific training laboratories NanoEducator have been installed in the Russian Federation. Beside that there are NanoEducators in more than 20 countries worldwide.

http://www.nanowerk.com/news/newsid=10078.php

Regulate nanotechnology industry: ACTU

April 13, 2009

Australia's expanding nanotechnology industry must be regulated to protect the health of both workers and consumers, the ACTU says.

Citing Scottish research showing some nanomaterials - as minute as one billionth of a metre - might be as deadly as asbestos particles, the Australian Council of Trade Unions (ACTU) is calling for a mandatory national register of who is importing, manufacturing, supplying and selling the materials.

The ACTU has also recommended products containing nanomaterials be appropriately labelled with regular monitoring of the health of local workers involved in the nanotechnology industry.

"With animal tests showing some nanomaterials share the same characteristics and reactions as asbestos fibres, governments and business must not repeat the painful lessons of the past and allow another tragedy to occur again," ACTU assistant secretary Geoff Fary said in a statement on Monday.

"Until we know more about nanomaterials, we should regulate as if it is dangerous to human health."

Nanotechnology is already used in more than 8,000 everyday items, including some sunscreens, cosmetics, bed sheets, building materials and paints.

Mr Fary said regulations should be introduced by the end of the year to coincide with the start of Australia's new nationally-harmonised health and safety laws.

http://news.smh.com.au/breaking-news-national/regulate-nanotechnology-industry-a

myfoxphilly.com

New Cancer Blood Scanner Tested

Last Edited: Monday, 13 Apr 2009, 10:33 AM EDT
Created On: Monday, 13 Apr 2009, 8:54 AM EDT

- By Jim Thompson

(MyFox National) - The science fiction of nanotechnology is becoming more science and less fiction every day. **The Wang Group** , headed by Prof. Shan Wang at Stanford University, has been working with various uses for magnetic nanotechnology and bio-sensing.

But the group's most recent effort has the potential to detect cancer earlier than ever before.

The team developed a prototype blood scanner that can find cancer markers in the bloodstream in early stages of the disease , potentially allowing for earlier treatment and dramatically improved chances of survival, **according to physorg.com** .

Wang is optimistic that the technology will someday save lives by detecting cancer early or by helping doctors select more effective therapy. "The earlier you can detect a cancer, the better chance you have to kill it," he said. "This could be especially helpful for lung cancer, ovarian cancer and pancreatic cancer, because those cancers are hidden in the body."

The scanner must pass clinical testing and trials before securing regulatory approval.

http://www.myfoxphilly.com/dpp/health/cancer_blood_scanner_dpgo_jst_2009041

The European Technology Platform on Nanomedicine General Assembly 2009 will be held in Germany in May

2009-04-10

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This years General Assembly of the European Technology Platform on Nanomedicine will be held in Münster, Germany, on the 11 - 12 May

This general assembly will present an industrial perspective on the most promising research areas and roadmaps that are expected to enable breakthroughs in Nanomedicine. These initial roadmaps have been identified during a high level ETP expert workshop in February 2009 and shall now be discussed with the larger community. Many challenges were already laid out in the Strategic Research Agenda of the ETP; it is now time to choose those roadmaps and research areas to invest in.

The primary objectives of the meeting will be

* the final discussion of the Roadmaps of the ETP to be delivered to the EC in Summer 2009
* information about the ERANET EuroNanoMed and its calls to be launched in June 2009
* Information about input in and impact on the work programmes of the EC units NMP, Health and ICT
* discussion of future directions of European industrial R&D in nanomedicine in view of the increasing competition from the US and Asia.

The meeting also provides a communication platform for networking and consortium building with leading experts from academia, industry and clinics.

The registration will be closed on 30. April 2009. As the number of participants is limited to 150, the admission will be handled on a first come first serve basis.

Notes to editor:

For further information, please visit: http://www.etp-nanomedicine.eu

http://cordis.europa.eu/wire/index.cfm?fuseaction=article.Detail&rcn=19088

Local universities establish Nanotech Institute with UM-St. Louis

Ben Gemignani

Issue date: 4/13/09 **Section:** News

University of Missouri-St. Louis, Washington University, St. Louis University, and St. Louis Community College are pooling their efforts to form the St. Louis Institute of Nanomedicine. Their mission: to research potential medical uses for nanotechnology.

In a news release by the Washington University School of Medicine, Samuel Wickline, MD., the man in charge of the Siteman Center of Cancer Nanotechnology Excellence said, "The institute will assemble a broad base of regional expertise in nanotechnology, medicine, technology transfer and education to create novel solutions to complex health-care problems.

It will be an inclusive, open network that will cultivate research and improve the ability to translate scientific discoveries into practical applications."

The news release goes on to state that the institute's goals are "the development and evaluation of new nanotechnologies for health care, the facilitation of commercialization and testing in patients, and the education of a new workforce and of the public at large."

Each of the participating organizations has its representatives in the Institute. From UM-St. Louis: Jingyue Liu, Ph.D., professor of physics and chemistry and director of the Center for Nanoscience, Washington University: the aforementioned Wickline and Dong Qin, Ph.D. and associate dean for research in the Department of Energy, Environment and Chemical Engineering, St. Louis University will be contributing Maulik R. Shah, M.D., Ph.D., assistant professor of pediatrics in the Division of Medical Genetics at Saint Louis University Cancer Center, and the St. Louis Community College system will be represented by Richard J. Norris, Ph.D., director of Plant and Life Sciences.

Funding for the Institute presently comes from the Missouri Life Sciences Research Fund, created as part of the 1998 state tobacco settlement. The Missouri General Assembly allocated $13.4 million to the Fund in 2007 and 2008, of which $1.5 million goes to the Institute. There are plans for securing other sources in the future, which were not disclosed. The Institute will be located on the campus of the Washington University School of Medicine in the Central West End, possibly in the building now entering its final stages of construction near the Central West End MetroLink station.

http://media.www.thecurrentonline.com/media/storage/paper304/news/2009/04/13

CNNMoney.com
A Service of CNN, Fortune & Money

Applied Nanotech Wins IDTechEx Printed Electronics Technical Development Materials Award

April 13, 2009: 09:20 AM ET

marketwire

Applied Nanotech Holdings, Inc. (OTCBB: APNT) is pleased to announce that its subsidiary Applied Nanotech, Inc. (ANI) and its strategic partner in Japan have won the prestigious IDTechEx Printed Electronics Technical Development Materials Award for the most significant technical development over the last 24 months (February 2007 - February 2009) in the field of material development.

ANI won for its inkjettable conductive copper ink that can be processed in air and printed on a flexible thin film substrate such as a polyimide. This low cost technology can pave the way for a new generation of environmentally friendly products and manufacturing methods. Within the printed electronics industry, it is well known that making products smaller and more efficiently is a major way to reduce energy use, costs, and negative environmental impact.

The creation of this inkjettable ink allows geometries and layers to be placed exactly where they are needed, in a process known as additive manufacturing. The low processing temperature of the ink enables the use of thin film substrates, creating a reduction in energy use and material usage. Copper itself is substantially less expensive than silver, a material commonly used in printed electronics, while its conductivity is only five percent lower.

"It is an honor to be recognized by IDTechEx and a panel of independent experts in printed electronics," said Dr. Zvi Yaniv, CEO of Applied Nanotech, Inc. "We hope that this accomplishment will facilitate the expansion of the printed electronics industry."

"Our investors and strategic partner have dedicated significant financial resources to this effort," said Thomas Bijou, CEO of Applied Nanotech Holdings, Inc. "It is gratifying to receive recognition for the truly innovative nature of these

developments."

Applied Nanotech, Inc. is an R&D IP company focused on solving problems at the molecular level. Its team of PhD level scientists and engineers work with companies and other organizations to solve technical impasses and create innovations that will create a competitive advantage.

http://money.cnn.com/news/newsfeeds/articles/marketwire/0490464.htm

Unions call for action to oversee nanotechnology

- **Dan Harrison**
- April 14, 2009

UNIONS are demanding urgent regulation of the nanotechnology industry, citing mounting evidence that some tiny particles used in products such as sunscreens and cosmetics could be as harmful as asbestos.

The ACTU is pushing for closer oversight of the rapidly growing industry, which contributes to more than 800 products including bedsheets, building materials and paints.

Little is known about the effects of nanoparticles — which are 100,000 times smaller than the width of a human hair — but one study reveals that one particle shares some characteristics of asbestos fibres and has a similar effect on mice.

"It's a very new product. The tests thus far are ringing alarm bells for us," said ACTU assistant secretary Geoff Fary.

"And so what we're saying is that we need to err on the side of caution.

"Just as asbestos, when it was first used, was considered a miracle product, and it was only after many years that people realised how devastating it was, we don't want to repeat the same mistake here."

Among the ACTU's demands are a national registry of all companies and organisations manufacturing, importing and supplying products containing nanomaterials, a labelling requirement for products containing nanomaterials, and for agencies to develop nanotechnology handling standards.

Thomas Faunce, an associate professor in the medical school and the college of law at the Australian National University, said that, while nanotechnology had enormous potential, regulations were needed to tackle the special properties of nanotechnology.

"Nanotechnology may be critical for our capacity to respond to the major global health crises that society is facing, particularly climate change, so we've got to embrace nanotechnology, but we've got to embrace safe nanotechnology," he said.

"Industry is racing ahead, developing all sorts of nano applications for various things and we feel as if it's racing ahead a bit too fast, and that we shouldn't just be waiting until the next paper gets published in *Nature* showing that another nanoparticle is dangerous," he said. "This is not the way to go about a systematic approach to regulation."

A report from a NSW parliamentary committee last year recommended changes to require the labelling of products containing nanoparticles.

The new national occupational health and safety body, Safe Work Australia, is conducting research on the implications of the technology.

Overseas, a recent report by the European Agency for Health and Safety at Work identified nanoparticles as one of the greatest risks for workers.

The European Parliament last month adopted a report recommending foods produced with nanotechnology be

required to undergo risk assessment and be clearly labelled.

The French Government has proposed legislation to regulate the manufacture, import and marketing of products containing nanoparticles.

http://www.theage.com.au/national/unions-call-for-action-to-oversee-nanotechnology-20090413-a4ts.html

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