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WEEKLY CLIPS

May 4 – 11, 2009



UK innovation nanotechnology patent landscape analysis

(Nanowerk News) The UK Intellectual Property Office has compiled a nanotechnology patent landscape for the UK. This reports on all UK patent data and reflects on UK innovation in the field of nanotechnology. The document can be [downloaded from the nanoKTN website](#) (pdf, 3.5 MB). Here is the executive summary:

Patent data reflecting UK innovation in the field of nanotechnology was analysed and several subsets considered separately:

UK innovation commercial organisations University applicants Global patent activity in nanotoxicity These yield the following observations in respect of UK innovation:

- UK strong overall in bionanotechnology
- Commercial organisations prolific in medical and cosmetic applications
- Universities strong in science-base research in nanostructures, physics and electrical applications including scanning probes, light guides, semiconductors and magnets
- Most prolific commercial patents closely related to densely patented (established) technology sectors
- University patents spread very broadly across all sectors and tend to populate underrepresented sectors supporting research bias

It was noted that whilst recent declines in nanotechnology patenting may be attributable to patent publication delays, evidence in university patenting, and the GB patent bias in the dataset suggested that the decline may be actual. If so, nanotechnology patent activity would seem to have peaked in 2002.

Under technology breakdown, medical preparation including targeted drug delivery and antibody directed enzyme therapy is seen to decline since prolific activity in the early 1990s. On the other hand, cyclodextrins and medicinal preparations involving nanoparticles and/or nanocapsules is recently resurgent. Activity in nanostructures and physics/electrical fields is ongoing and may be attributable to recent university research pursuing these technologies.

The UK is underrepresented in nanotoxicity, but this appears to be a growth area, peaking recently in 2005.

Patent portfolio (holdings) analysis suggests, despite the bias of patents in established areas assigned to commercial organisations, that new entrants and exploratory research still form a significant part of the UK nanotechnology landscape; 49% of patents are held within portfolios of less than 20 nanotechnology patents.

Collaborative activity between applicants is noted although inventor collaborations are more prolific. Universities are seen to collaborate widely suggesting a high degree of technology transfer and/or spin out. Patents held by non-commercial organisations make up 33% of the dataset. This suggests a significant research and development activity-base with continuing commercialisation and applications development.

<http://www.nanowerk.com/news/newsid=10582.php>



Posted: May 11, 2009

Nanotechnology Health and Safety Forum Announces Lineup of Speakers to Include Dr. Leroy Hood, and former U.S. Congressman George R. Nethercutt, Jr.

(Nanowerk News) The Nanotechnology Health and Safety Forum (NHSF), an event that will focus on occupational and environmental health and safety standards of nanotechnology, today announced a lineup of speakers to include Dr. Leroy Hood, renowned co-founder of the Institute for Systems Biology and recipient of the Biotechnology Heritage Award, and Dr. Kenneth Dawson, Director of the Centre for BioNano Interactions (CBNI), the Irish national platform for excellence in the interaction of nanoparticles with living systems.

NHSF is sponsored by Battelle, Porter Wright Morris & Arthur, the University of Washington, the University of Oregon, and Oregon State University, and will focus on occupational and

environmental health and safety standards of nanotechnology, providing attendees with important insights and answers.

“The Nanotechnology Health and Safety Forum brings together a stellar group of government and industry leaders to address health and environmental issues that could occur with emerging nanotechnology applications,” said Dr. Richard Pleus, toxicologist and managing director of Intertox, and NHSF Steering Committee chair. “Nanotechnology provides a tremendous opportunity to address some key medical, environmental, energy and technology based issues. However, there are risks with nanotechnology. A group of international scientists, including members of this forum, are working to ensure nanotechnology is health protective as it increasingly becomes a part of our daily lives.”

The NHSF has been scheduled to coincide with the first U.S.-hosted meeting of the International Organization for Standardization (ISO) Technical Committee (TC) 229 Nanotechnologies, which is taking place June 8-12, 2009. The forum will provide attendees with the unique opportunity to interact and connect with participants of the ISO meeting.

“ISO is working to develop international standards for nanotechnology. One focus of the work headed by the US group is standard setting related to environmental health and safety” said Dr. Pleus, also a toxicology expert and ISO delegate for the US. “With both meetings are occurring at the same time in Seattle, we are hoping for a cross fertilization of ideas.”

Speakers will include:

- George R. Nethercutt, Jr., former US Congressman who represented the 5th District of Washington from 1995-2005 in the US House of Representatives
- Dr. Kenneth Dawson, Director of the Centre for BioNano Interactions (CBNI)
- Dr. Leroy Hood, renowned co-founder of the Institute for Systems Biology and recipient of the Biotechnology Heritage Award
- Dr. Saber M. Hussain, Adjunct Assistant Professor of Pharmacology and Toxicology at the Air Force Research Laboratory
- Dr. Vladimir Murashov, special Assistant on Nanotechnology to the Director of the National Institute for Occupational Safety and Health in the U.S. Department of Health and Human Services
- Dr. Robert Tanguay, Associate Professor in the Department of Environmental and Molecular Toxicology, the Director of the Sinnhuber Aquatic Research Laboratory, and the Director of the NIEHS Toxicology Training Grant

Attendees of the NHSF will receive important insights and answers about the following topics:

- The EHS Progress Report: today’s status and tomorrow’s next steps
- International Standards: developing a timeline & milestones
- Navigating Regulations: encouraging dialogue between Europe, Asia, and the U.S.

- Safety Guidelines: state of the science and recommended occupational safety guidelines for working with nanomaterials
- Managing Risk: the insurance industry perspective
- What's New: current activities of innovative nano-manufacturers

<http://www.nanowerk.com/news/newsid=10555.php>



Nanosys today announced the creation of QD Soleil, a wholly owned division focused on the use of its proprietary nanotechnology in solar panel cell designs. Nanotechnology is the next step in the natural evolution of a solar generated grid-ready energy supply.

QD Soleil's intellectual property is a seminal estate that includes over 500 patents and patent applications. This technology has been refined over many years by Nanosys and exploits the best in class inorganic material compositions, processing and integration chemistries, and includes the most stable nanomaterial formulations known. Applications of the technology and intellectual property are broad and include additive enhancement layers for light conversion engineering, nano-particle inks, light waveguide concentrators and nanomaterial composites for enhancing overall solar cell efficiency. Nanosys is considering strategic options to maximize the value of QD Soleil, including possible sale to a large photovoltaic manufacturer. QD Soleil is now meeting with potential partners and parties interested in acquiring a substantial footprint in nanotechnology for photovoltaics.

"Based on the current administration's energy focus, the U.S. is likely to grow into the largest installed market of solar panels in the world over the next five years," commented Nanosys CEO Jason Hartlove. "Nanosys is one of the world's leading nanotechnology companies, with a consolidated position in inorganic nanotechnology, and significant product launches in other areas such as green lighting this year. Therefore, we believe that QD Soleil can focus and execute more effectively as a separate division."

"It's an exciting time for QD Soleil to engage with larger companies best poised to fully exploit seminal IP, know-how and critically enabling technologies," said Vijendra Sahi, VP and GM of the QD Soleil division. "We are particularly excited because we can utilize much of the technology base and materials now being launched in products by Nanosys."

"The acquisition of QD Soleil would be an ingenious way, especially in this environment, to take a focused approach to innovation and R&D," said Josh Wolfe, co-founder and Managing Partner of Lux Capital. "Furthermore, so significant is the QD Soleil patent portfolio and know how that it could be extremely valuable to any entity contemplating nanotechnology in solar today."

Posted May 12, 2009

<http://www.azom.com/news.asp?newsID=17001>



Forget about lead-tainted mascara or mercury in the salmon filet. The new form of product pollution people are worrying about is nanotechnology—the use of materials measured in billionths of a meter—and how coming into contact with it might damage your health. Fueling the nano-scare is negative press, including a [report](#) by the Environmental Working Group that concluded hundreds of consumer products contain poorly-studied nanoscale materials and a landmark [study](#) published in the journal Nature Nanotechnology that suggests some forms of carbon nanotubes could be as harmful as asbestos, which causes lung cancer if inhaled in sufficient quantities.

Though the Nature study points out risks in the fledging nanotech industry, co-author Andrew Maynard says results like the one in his study are good news, if only because they show that carbon nanotubes can be made safe through more research and better regulations. "There's already a debate occurring about the potential safety issues of nanotech and how to get around them," says Maynard. "That's a good thing because it's something that hasn't always happened with previous technologies."

The government and consumer groups are already considering strengthening safety standards, while research into the effects of the young industry has just begun. Maynard stresses that consumers should be cautious, rather than overly concerned, when using products made with nanomaterials. "This is very clearly a technology that can be used for tremendous good," he says. "People just need to be smart enough to ask the right questions about how they can use it safely."

<http://www.mnn.com/the-home/household-products/stories/is-nanotechnology-friend-or-foe>

Nanotech mobile phone Arab headdresses? Nobelist says not far-fetched

Knight Ridder/Tribune Business News (May 8, 2009)

May 8--ARAB headdresses equipped with invisible mobile phone technology" It's not as far-fetched as it sounds, according to a Nobel Prize winner visiting Bahrain.

Nobel Prize 2007 laureate Professor Peter Grunberg, from Germany, said there was no limit to what could be achieved in the Middle East using nanotechnology.

> He urged Bahrain and other oil-rich countries to invest in this exciting area of scientific development, which "offers ways to create smaller, cheaper, lighter and faster devices that can do more and cleverer things", according to the Institute of Nanotechnology.

In fact, Professor Grunberg said what could be achieved was limited only by people's imagination -- adding that many of the applications were almost fantastic.

"One could try gutra mobiles -- there could be a market for that here," he said.

http://www.smalltimes.com/news/display_news_story.cfm?Section=WireNews&Category=HOME&NewsID=177706



Abstract:

Nanotechnology is an evolving branch of science. It is a powerful technology of the current era with wide range of industrial applications and reconstructing of nature at molecular level. It is concerned with the objects that range between 1 to 100 nanometers. A nanometer is a one billionth part of a meter (1x10e-9).

Nanotechnology Patents: A Legal Insight

India | Posted on May 9th, 2009

Nanotech products are outcome of nano-techniques and include nano-particles production, nanofabrication and nanobiotechnology. These products have wide applications in various science and technological areas.

Investments in the field of nanotechnology research and developmental activities are constantly increasing. Many countries have allocated huge amounts, in private and public sectors, to these programmes to boost its activities further. The increase in number of nano-patents have posed several legal issues particularly pertaining to the patenting activities, claims, anticommons, thickets, land grab, doctrine of inherency, doctrine of claim differentiation etc.

This book contains articles that explore various aspects of nanotechnology, patenting of nanotech inventions and economic, ethical and societal perspectives of the nanotech patents.

http://www.nanotech-now.com/news.cgi?story_id=33187

The logo for FDANEWS, featuring the word "FDANEWS" in white, bold, sans-serif capital letters on a dark blue rectangular background.

Expert Calls for Establishment of Agency to Regulate Nanotech

To prepare for future nanotech challenges, an environmental expert is calling for a new agency to regulate and research the health and environmental impact of products, such as devices, manufactured with nanoparticles. "There is a huge gap between the existing oversight system and the oversight of rapidly moving technologies," Clarence Davies, a political scientist and former Environmental Protection Agency official, said during a presentation for the Project on Emerging Nanotechnologies.

[Devices & Diagnostics Letter](#)

<http://fdanews.com/newsletter/article?issueId=12639&articleId=116896>

The logo for THE Business Journal, with "THE" in small blue letters above "Business Journal" in a large, blue, serif font. Below it, "SERVING GREATER MILWAUKEE" is written in a smaller, blue, sans-serif font.

SolRayo joins UW nanotech consortium

SolRayo LLC has accepted an invitation to join a nanotechnology consortium at the University of Wisconsin-Madison, the Madison company's parent said Wednesday.

The UW's Advanced Materials Industrial Consortium gives commercial partners the opportunity to collaborate with students and faculty in advanced materials research across the UW-Madison campus, according to a press release from **Enable IPC Corp.**, of Valencia, Calif.

"This opportunity provides us with a valuable resource," said SolRayo chief technology officer Kevin Leonard. "As part of this consortium we will have access to equipment and expertise that is otherwise very difficult to come by."

SolRayo is particularly interested in being able to access the Materials Research Science and Engineering Center on Nanostructured Interfaces, which was established at the university by the National Science Foundation.

SolRayo provides enhanced electrodes for ultracapacitor applications. The company works to commercialize a new material to cut costs and increase the electrical energy storage of ultracapacitors, making wind and solar energy more practical for utility use.

Enable IPC announced its acquisition of SolRayo in September 2008.

<http://www.bizjournals.com/milwaukee/stories/2009/04/20/daily45.html>

The logo for nano werk, with "nano" in a blue, lowercase, sans-serif font above "werk" in a white, lowercase, sans-serif font. The "werk" text is set against a green-to-white gradient background.

Novel technique for real-time detection of carbon nanotubes in the body

(*Nanowerk Spotlight*) New work at the University of Arkansas has, for the very first time, demonstrated that [Raman spectroscopy](#) can be used to detect and monitor circulating carbon nanotubes *in vivo* and in real time. These findings could have a significant impact on the knowledge of how nanomaterials interact with living biological systems.

Carbon nanotubes (CNTs) can be used for various advanced bio-medical applications. Before any clinical application of nanoparticles, it is imperative to determine critical *in vivo* parameters, namely pharmacological profiles including nanoparticle clearance rate from the circulation and their biodistribution in various tissue and organs. Until now, their distribution was only monitored by collecting samples after various time intervals, but this new research shows the ability of monitoring their concentration *in vivo* and in real time, while the animal is alive. Moreover, this work can be extended to the detection of circulating cancer cells that have been tagged by carbon nanotubes.

"We were motivated by the desire of being able to visualize individual carbon nanotubes moving in lymph, blood and tissues," [Alexandru S. Biris](#) tells Nanowerk. "Prior to our work it was not possible to visualize carbon nanotubes *in vivo* in real time or to observe how cancer cells migrate through circulation."

Biris, Chief Scientist and Assistant Professor at the University of Arkansas Nanotechnology Center, and his collaborator [Vladimir Zharov](#), Professor and Director of the Philips Classic Lasers and Nanomedicine Laboratory at the University of Arkansas for Medical Sciences believe that *in vivo* flow cytometry using Raman detection technique is very promising for counting and identification of individual circulating nanoobjects with strong Raman scattering properties, and this technique can be supplementary or alternative to existing fluorescent and photoacoustic methods.

<http://www.nanowerk.com/spotlight/spotid=10580.php>

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