



NANO NEWS - SOUTH AFRICA

Volume 1, January 2011

Compiled & Edited by *Patience Iyuke*

Co-edited by *Neil Coville*

Introduction

The New Year is well underway and no doubt it will be another exciting year for all. The major event on the SA calendar will be the SANi conference (details in the next newsletter) but many other nano events will take place during 2011 as well. Also – 2011 is the UNESCO International Year of Chemistry (IYC2011). The IYC was ‘initiated’ in SA at the recent SACI Convention. Those working in nanotechnology will be able to celebrate the IYC as we hope to include this theme in numerous of the scientific events to be held in SA in 2011. This year SAASTA will play a bigger role in the Newsletter as it moves from its original home at WITS to become the SA nano-newsletter. Patience Iyuke will also be working on a quarterly ‘nano magazine’ this year, geared to a wider audience. More in later newsletters.

Neil Coville

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Eleventh International Conference on Frontiers of Polymers and Advanced Materials

The eleventh International Conference on Frontiers of Polymers and Advanced Materials will be held at the University of Pretoria Conference Centre, Hatfield Campus, Pretoria, South Africa from the 22nd to the 27 May 2011

Objectives

The conference provides a unique scope involving a blend of science, technology and business.

It brings together leading international scientists, engineers, top-level industrial management and business executives for discussions on the status of advanced materials, new technologies and industrial and business opportunities.



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The conference is truly multidisciplinary and global with participation of scientists, engineers, industrialists and business representatives.

The main Conference Objectives are:

- To highlight advances and new findings in polymers and advanced materials and their impact on new technologies;
- To facilitate technology transfer and new business opportunities by bringing together representatives from academia, research centres, industries and business;
- To foster international collaborations and joint ventures;
- To cooperate with the formation of the new generations of scientific and professionals committed to the scientific-technological innovation in the region;
- To promote the growth of scientific and technical infrastructure in the field of polymers and advanced materials technologies.

Conference Theme

The International Union of Pure and Applied Chemistry (IUPAC) declared 2011 as the International Year of Chemistry. The then President of IUPAC stated: "The International Year of Chemistry will give a global boost to chemical science in which our life and future are grounded. We hope to increase the public appreciation and understanding of chemistry, increase young people's interest in science, and general enthusiasm for the creative future of chemistry" The 11th ICFPAM conference supports this call and will assist in promoting chemistry activities. Consequently the conference theme is to: Celebrate the contribution of Chemistry as an enabling science for polymers and advance materials.

CONFERENCE FORMAT

The conference will include general plenary talks, tutorials, invited lectures, contributed talks as well as poster sessions. An exhibition on polymers, advanced materials, equipment and recent applications is planned.

Important dates

Registration Opens	1 Sept 2010
Final Date for Submission of Abstracts	13 Nov 2010
Acceptance Notifications	31 Jan 2010
Submission of Extended Abstracts/Papers	25 Feb 2011
Closing Date for Early Bird Registration	25 Feb 2011
Final Date for Registration and Payment	22 April 2011
Opening Ceremony with Keynote Speakers	22 May 2011
Social Event	23 May 2011
Dinner and Dance Closing Ceremony	26 May 2011



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Events Website: www.icfpam.co.za

E-mail: conference@icfpam.co.za

Call for research proposals

The African Union Commission is seeking proposals for research focusing on the following thematic priorities articulated in Africa's Science and Technology Consolidated Plan of Action (CPA) and its Lighthouse Projects: (a) Post-harvest and Agriculture, (b) Renewable and Sustainable Energy, and (c) Water and Sanitation in Africa. The programme is financed through the Financing Agreement between the European Commission and the ACP Group of States under the ACP Research for Sustainable Development Program of the 10th EDF Intra-ACP Envelop.

South African researchers are eligible to apply to the Africa Research Grants scheme provided they are part of a consortia, which includes at least two other African organisations from two different African countries forming part of the ACP Group (i.e. Sub-Saharan Africa). Find out more... <http://www.africahrst.org/stict/rgp/call2011.aspx> or <http://www.esastap.net/esastap/home/index.php>

IoN Media Pack 2011

The Institute of Nanotechnology (IoN) provides a wide range of information services to help organisations promote their nanotechnology products and services to the nano-focused audience on a worldwide basis. Our extensive website and global database will assist you in reaching new customers and you will get an effective route to target market.

IoN Corporate Members are entitled to a 20% discount on all website and database promotion prices. Find out more or download our media pack:

<http://www.nano.org.uk/files/ratecard/media-pack.pdf>

IoN Webinars

Institute of Nanotechnology webinars deliver live content via the internet. They can be attended from the convenience of your home or office, where multiple attendees can participate for the cost of a single registration. Network and learn in a relaxed environment!

Presentations from all previous webinars are available to Student, Professional and Corporate members in the members only area of the website. If you are interested in becoming a member to receive the presentations and many more benefits then



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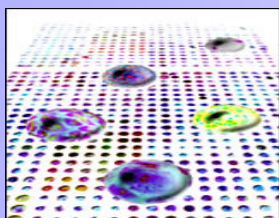
please contact Gemma McCulloch - gemma.mcculloch@nano.org.uk

Source: <http://www.nano.org.uk/events/ion-events>

Nanosized Biosensors in Healthcare: Live Webinar

Date: Thursday, 17th February 2011

Time: 14.00 - 15.00 GMT



Medical technology is one of the leading application areas for science at the nanoscale. The unique properties of materials at the nanoscale provide many opportunities to develop novel approaches to diagnosing diseases at increasingly early stages and developing therapies that can be targeted precisely to the site of the problem whilst avoiding damage to healthy cells and tissues. Furthermore, today's healthcare systems are constantly under pressure to find novel technical solutions that are more effective, patient-friendly and cost-efficient.

In this live webinar, Professor Seamus Higson of Cranfield University and Richard Moore of the Institute of Nanotechnology explore how nanoscience is contributing to developing novel nanosized or nano-enabled biosensors that can provide a wide range of physiological, metabolic and other key measurements in vivo or contribute to new generations of diagnostic devices. They will explore the scientific principles underpinning the use of nanobiosensors, examine some of the latest technological developments and address some of the challenges to bringing these versatile and important devices to market.

Prices: IoN Members: Free
Non-Members: £25

For further information please contact Carrie Smith - carrie.smith@nano.org.uk
or go to: <http://www.nano.org.uk/events/registration/webinars>



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DARP Invests in Notre Dame Nano Research

The University of Notre Dame has emerged as a center for advanced nanomagnet logic (NML) research — a promising field where the transmission and computation of data are accomplished using magnetic fields rather than electrical current. The technology has the potential to create a class of small, high-functioning components and devices that could transform the electronics industry. The Defense Advanced Research Projects Agency (DARPA) hopes to accelerate these discoveries through a \$9.9-million contract to Notre Dame's Center for Nano Science and Technology. "Research in nanomagnet-based devices, for logic and memory, represents a paradigm shift in digital and analog electronics," says Devanand K. Shenoy, PhD, program manager for DARPA.

Led by Wolfgang Porod, PhD, professor of electrical engineering and director of the Center, the team consists of researchers from Notre Dame, the University of California at Berkeley, the Technical University of Munich, and private-sector partners IBM and Grandis. The ultimate goal is to invent a type of logic/computational platform powered by magnets that will eventually lead to the development and commercialization of an all-magnetic information processing system.

Instead of using transistors, the standard components in today's computers, Porod's team is studying how nanomagnets can achieve the same or even higher computational function. "The idea behind NML is nanomagnets hold the information, and interactions between the magnets actually perform the data transmission and computation," Porod explains. Tiny nanomagnet islands, or dots, are arranged in close proximity using microelectronic manufacturing techniques. No wires connect the individual dots — an advantage over conventional silicon chip technology, where wires are needed between individual transistors. "Flipping" the field from north to south or south to north in one magnet induces the same action in the adjacent one, creating a switching mechanism that transfers information from dot to dot.

The Center for Nano Science and Technology already has developed the basic components and has proven this kind of nanomagnet logic is feasible. In addition, nanomagnets can be fabricated easily, and NML processes consume up to 100 times less power than current computer technologies, so little heat is generated. Another advantage of magnetic memory is that it is "nonvolatile" — in other words, it doesn't lose information it is using when it shuts down. "This may significantly change how computers operate," Porod says.

Sources: *Thriving in Michiana* : <http://www.southbendtribune.com/article/20110103/THRIVE/110109912/1256/THRIVE> & ***Tech Transfer eNews***: <http://www.technologytransfereconomics.com/content/2011/01/05/darpa-invests-in-notre-dame-nano-research/>

Submitted by Robert Caveney, Wits Enterprise



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Lists of Nanoscience and Nanotechnology Events

Local Events

- i). The Eleventh International Conference on Frontiers of Polymers and Advanced Materials, University of Pretoria Conference Centre, Hatfield Campus, Pretoria, South Africa, 22nd -27th May 2011: www.icfpam.co.za
- ii) The 4th NanoAfrica Conference, CSIR International Convention Centre, Pretoria, South Africa. The date is yet to be confirmed.

International Events

- i) 1st National Conference on Nano Science & Technology, Yazd, Iran, 16th-18th February 2011: <http://www.goingtomeet.com/103771> or <http://nntc.ir/2011/>
- ii) Nanosized Biosensors in Health Care, Thursday 17th February 2011, 14:00 hours GMT.
Online registration: <http://www.nano.org.uk/events/registration/webinars>
For more information visit: <http://www.nano.org.uk/events/ion-events>
- iii) Nanoscience Earlybird Conference, Sharm el Sheikh, Egypt, 19th-22nd February 2011: <http://www.zingconferences.com/z.cfm?c=63>
- iv) WSEAS International Conference on Nanotechnology 2011, University of Cambridge, Cambridgeshire, England, United Kingdom, 23rd-25th February 2011: <http://www.goingtomeet.com/169020> or <http://www.wseas.us/conferences/2011/cambridge/nanotechnology/>
- v) 4th NanoTech Insights Conference, Cairo, Egypt, 27th February-2nd March 2011: <http://www.nanopaprika.eu/profiles/blogs/nanotech-insights-conference>
- vi) The 5th International ICST Conference on Nano-Networks: Nano-Net 2011, Atlanta, Georgia, United States, 14th-16th March 2011: <http://www.goingtomeet.com/166244> or <http://www.nanonets.org/>
- vii) World Congress on Sustainable Technologies (WCST-2011), London, England, United Kingdom, 21st -23rd March 2011: <http://www.goingtomeet.com/60073> or <http://www.wcst.org/>
- viii) 'Nanomedicine: what is it and how can it help the patient?' IET Teacher Building, Glasgow, 22nd March 2011: <http://www.nano.org.uk/events/ion-events>



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- ix) Advanced Technologies for an Ageing Population, The IET Teaching Building, Glasgow, UK, 23rd-24th March 2011:
<http://www.nano.org.uk/conferences/ageing2011/overview.htm>.
- x) Nano and Water 2011: Nanotechnology for the water Sector, Centro Stefano Franscini, Monte Verità, Ascona, Switzerland, 15th-18th May, 2011 <http://www.iwanano2011.org/> or
http://www.iwanano2011.org/IWA%20Nano_FirstCircular.pdf
- xi) International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC 2011), University of Sussex, East Sussex, England, United Kingdom:
<http://www.goingtomeet.com/177160> or <http://www.rsc.org/ConferencesAndEvents/RSCConferences/6-ISMSC/venue.asp>
- xii) Tenth International Conference on Materials Chemistry (MC 2011), Manchester, England, United Kingdom, 4th -7th July 2011:
<http://www.goingtomeet.com/177223> or
<http://www.rsc.org/ConferencesAndEvents/RSCConferences/MC10/>
- xiii) The 2nd International Conference on Nanotechnology (ICNFA 2011)- Fundamentals and Applications, Ottawa, Ontario, Canada, 27th-29th July 2011: <http://www.goingtomeet.com/109342> or
<http://icnfa2011.international-aset.com/>