

London Technology Network
Ideas into Action

Early bird special!
Register before
31 August 2004 and
get a £50 discount!

Exploring the commercial potential of **Bio-Nanotechnology and Nano-Medicine**

Moving beyond the hype

29 September 2004, London

LTN provides a unique perspective on how combining academic and industrial resources can optimise the effectiveness of your R&D investment

- Overcome the barriers to move nanotechnology research forward in the biomedical field
- Access potential technological applications of nanotech research for the pharmaceutical and biotech industry
- Create successful partnerships between academia and industry for new product development
- Understand how the UK government is directing its resources to maximise the potential benefits of nanotechnology

Who should attend? Heads and Directors as well as Senior Researchers and Scientists working in R&D, Discovery Research, Molecular Biology, Chemistry, Materials, Tissue Engineering, Technology Development in the Pharmaceutical and Biotechnology industry as well as academic research institutions.

Expert speakers from



Academic showcase from



LTN's Mission To help technology-intensive companies be more effective and efficient in their 'knowledge acquisition' from London's universities.

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'Nanotechnology products will certainly disrupt'

Harvard Business Review

Promising anything from cancer-targeting micro-robots to chip-sized computers, many believe that nanotechnology will give rise to the next industrial revolution. Some experts even predict that by 2015, the global market for nanotech-based products will reach \$1 trillion employing 800,00 workers in the United States and 2 million worldwide. However, as nanotechnology is not a single field but cuts across disciplines including physics, chemistry, biology, engineering and materials sciences, its real commercial potential is much harder to pinpoint.

This 1-day seminar will address the challenges in this exciting field by bringing together professionals from pharmaceutical and biotech companies plus the world-class resource of London's academics to explore cutting-edge advances in nanotechnology research in the biomedical field. Experts will determine when and how the pharmaceutical and biotech industry will be affected by nanotechnologies and how a joint approach can maximise return on investment in this area.

An academic showcase of London's best nanotech-based academic research as well as poster displays from LTN Business Fellows will provide you with the knowledge you need to adopt a more strategic approach to accessing nanotech research and realise potential applications.

17 compelling reasons to attend this event:

- 2 industry speakers outlining their strategy for investing in nanotechnology research
- 8 academic speakers providing a cutting-edge update on the latest advances in bio-nanotechnology research, methods and models emerging from London's universities
- 1 case study from IBM and the University College London highlighting the benefit of partnerships for realising the commercial potential of nanotechnologies
- 1 DTI speaker giving you the latest on directions in government funding for joint research programmes in bio-nanotechnologies
- 5 hours of networking with industry and academic peers to discuss the future of nanotechnologies in the biomedical sector

Speaker biographies

Steve Brocchini, School of Pharmacy

Steve received his PhD at the University of Michigan. This was followed by a postdoctoral at Emory University, after which he moved to the UK. After 3 years working as a medicinal chemist in industry, he went back into academia as an adjunct faculty member at Rutgers University. Following this, he has been at the School of Pharmacy, University of London for the last six years lecturing in chemistry and drug delivery. Together with his colleague, Dr Sunil Shaunak of the Hammersmith Hospital at Imperial College, he co-founded PolyTherics Ltd.

Ian James Bruce

University of Greenwich and Università degli Studi di Urbino
Ian graduated from UCL in 1988 in genetics, went on to research bacterial and yeast genetics and was awarded a PhD in 1992. Subsequently, he held postdoctoral positions at UCL and was a visiting Research Fellow in Argentina, Tucuman and Buenos Aires and EMBO. He holds Professorial appointments at the University of Greenwich and l'Università degli Studi di Urbino in Italy. Ian is consultant to a number of major UK and EU industries in areas relating to molecular biology and product development/innovation.

Hugh Clare, Department of Trade and Industry

Hugh is Director of the UK Micro and Nanotechnology Network. Hugh joined the network from Unilever, where he was an expert in Micro and Nanotechnology and manufacturing. He was also one of the founding members of the UK Microsystems and Nanotechnology Manufacturing Association (MMA), and has been its chairman for the last four and a half years.

Jawwad Darr, Queen Mary, University of London

Jawwad has been an EPSRC Advanced Research Fellow and Research Lecturer at Queen Mary University since 2001. He received his PhD from Imperial College and has a strong background in synthetic chemistry, molecular precursor design, and the application of supercritical fluids technologies towards the generation of nano-materials. In 2001, he set up the Clean Materials Technologies (CMT) group at Queen Mary, to act as a focus for collaboration with UK industry and academia for the development of supercritical fluids 'green' technologies.

Andrew De Mello, Imperial College London

Andrew has been on the faculty in the Department of Chemistry at Imperial College London since 1997 and is currently Professor of Chemical Nano-sciences. Previous to this, he held positions at the University of East Anglia and the University of California, Berkeley. Andrew's current research programmes are focussed on miniaturised chemical analysis systems and ultra-high sensitivity detection. In particular, his group has an established track record in the development of lab-on-a-chip technology, nano-reactors for synthetic chemistry and biology, and novel chip-based detection protocols.

Michael Horton, University College London & LCN

Michael is a Professor of Medicine at the Medical School of University College London, and Director of the Bone and Mineral Centre and the Sackler Institute for Musculo-Skeletal Research at University College London. More recently, he has begun a new research programme on 'smart' materials for implants and tissue engineering applications and is, additionally, a principal investigator in the London Centre for Nanotechnology (LCN) and the Interdisciplinary Research Collaboration in Nanotechnology based at the University of Cambridge and University College London.

Alex Knight, National Physics Laboratory

Alex has a background in both molecular biology and biophysics, with experience in single-molecule techniques and instrumentation development. He has wide experience in the development and application of instrumentation for biophysical measurement and imaging. He has recently joined the team and is applying his expertise to a wide range of measurement problems of relevance to the biotechnology industry. He is currently working on the development of novel standards for fluorescence measurement, as well as providing support for NPL's work in single molecule detection methodologies.

Hans Peter Lang

IBM Zurich Research Laboratory & University of Basel

Hans Peter works at the Institute of Physics at the University of Basel, Switzerland and at the IBM Zurich Research Laboratory as a research scientist and project leader. His main areas of research interest are cantilever sensors, scanning probe microscopies, fullerenes and high temperature superconductors.

Rachel McKendry, University College London

Rachel received a PhD in Chemical Force Microscopy from Cambridge University in 1998 and was then elected a Junior Research Fellow in Gorton College. Subsequently, she worked at IBM Research Laboratories in Zurich and became a Royal Society Dorothy Hodgkin Research Fellow in the London Centre for Nanotechnology in 2001. Her research focuses on the use of the atomic force microscope (AFM) to probe biomolecular interactions and nano-mechanics. She aims to employ AFM technology to address fundamental problems in chemical biology and to apply our understanding of these processes to develop nano-mechanical biosensors.

Quentin Pankhurst, University College London & LCN

Quentin is Deputy Director of the London Centre for Nanotechnology (LCN) and a Reader in Physics at University College London. In 20 years of research on magnetic nano-particles, he has pioneered work on both naturally occurring and synthetic materials, ranging from Alzheimer's disease plaques to core-shell nano-particles for magnetic recording. He is Chair of the UK Nanomagnetism Network.

Peter Reid, London Technology Network

Peter is Chief Executive Officer of the London Technology Network and the Centre for Scientific Enterprise. Peter is an alumnus of both University College London (Physics) and London Business School (Sloan Fellow - MSc in Management). He founded three companies that were variously involved with developing new patent-protected products, precision and process engineering.

Andrew Wood, Eli Lilly

Andrew Wood qualified in medicine at Oxford University. He joined Eli Lilly & Co in 1991, following 10 years in academic medicine. He has been involved in many aspects of drug development, with particular emphasis on Neuroscience compounds, and has led both clinical and preclinical research activities in UK, Belgium and Japan. He is currently responsible for the European regional component of Lilly's Global Research Acquisition function.

Conference programme

09.00 **Registration with tea & coffee**

09.30 **Introduction to aims and objectives of LTN**

Peter Reid, *Chief Executive Officer*
LONDON TECHNOLOGY NETWORK

09.40 **Opening address from the Chair**

Michael Horton, *Director Medicine*
UNIVERSITY COLLEGE LONDON & *Director*
LONDON CENTRE FOR NANOTECHNOLOGY

09.55 **Determining what pharmaceutical companies will need from nanotechnology partners**

- Establishing how major pharmaceutical companies think about partnerships in emerging technologies
- Considering key concerns when planning to engage with major pharma companies
- Identifying specific technical issues

Dr Andrew Wood, *Executive Director, Research Acquisition Europe*
ELI LILLY & CO.

10.35 **Tea & coffee: networking opportunity with poster session**

11.05 **How to gain access to funding for your joint research to harness the commercial opportunities offered by nanotechnologies**

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- Introducing the UK government's strategy for funding micro- and nanotechnology based research
- Identifying the demand for, and working with stakeholders to provide the new facilities needed to build UK nanotechnology-based capability
- Encouraging a coordinated approach to applied research programmes for medical healthcare, bio-nano, nano-particles, and nano-plastic electronics
- Supporting better use of facilities to take 'blue-skies research' through to high-volume and high-value-added manufacture by UK companies

Hugh Clare, *Director, UK Micro and Nanotechnology Network*
DEPARTMENT OF TRADE AND INDUSTRY

11.45 **Opening new frontiers in bio analysis and diagnostics: sensor arrays for label free molecular recognition**

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- Using microfabricated arrays of silicon cantilevers
- Exploring gene fishing: picomolar sensitivity, in-situ label-free detection of oligonucleotides
- Evaluating application of cantilever biosensor as a portable device to detect cardiovascular marker proteins

Dr Rachel McKendry
Research Fellow Medicine
UNIVERSITY COLLEGE LONDON

Dr Hans Peter Lang
Research Scientist & Project Leader
IBM ZURICH RESEARCH LABORATORY
& UNIVERSITY OF BASEL

12.45 **Lunch for delegates and speakers**

Further networking opportunity and chance to browse through poster displays from LTN Business Fellows

About London Technology Network

London Technology Network (LTN) is a non-profit initiative funded by the UK Department of Trade and Industry. Our aim is to make the technology resources of London's best research centres more accessible to business. Each month, LTN brings together industrial and academic thought leaders in the most powerful new technologies, both on the stage and in the audience. LTN discussions identify common technology platforms shared across industries and disciplines, and explore how industry, government and academia can collaborate to develop technology-based innovations. Attendees build personal networks that foster efficient transfer of technology and drive down the cost and time to deliver new products to market.

Academic showcase + Q&A

The afternoon sessions provide the opportunity to get a cutting-edge update on the latest advances in bio-nanotechnology research, methods and models emerging from London universities.

Chair: Michael Horton, *Director Medicine*
UNIVERSITY COLLEGE LONDON & *Director*
LONDON CENTRE FOR NANOTECHNOLOGY

13.45 **Using Nano-Bio-Rapid-Clean (NBRC) technologies for drug delivery and tissue engineering**

- Nano-ceramics using clean emulsions
- Nano-Bio-ceramics using 'water in oil' emulsions
- Rapid and controlled release drug delivery technologies for poorly water soluble drugs using clean solvents
- Developing nano- and bio-materials with controlled porosity or composition for tissue engineering

Dr Jawwad Darr, *Research Lecturer, IRC in Biomedical Materials*
QUEEN MARY, UNIVERSITY OF LONDON

14.05 **Exploiting the commercial potential of large molecules for drug development**

- Lowering the risk of new drug development by taking advantage of large molecules to treat inflammation, infection and cancer
- Exploiting the polyvalent properties of water-soluble polymers for developing new medicines
- Accelerating the development of protein-based medicines by using novel site-specific conjugation of PEG to proteins

Dr Steve Brocchini, *Senior Lecturer in Chemistry*, SCHOOL OF PHARMACY

14.25 **NACBO: an EU Framework Programme 6 Integrated Project Using the structure of composite materials for applications in molecular biology and diagnostics**

- Using structured nano and micro composites
- Employing surface activation and modification
- Applying nucleic acid assembly chemistry
- Determining applications in life science sector

Prof Ian Bruce, *Molecular Biology*
UNIVERSITY OF GREENWICH & UNIVERSITÀ DEGLI STUDI DI URBINO

14.45 **Q&A**

15.00 **Tea & coffee: networking opportunity with poster session**

Continuing academic showcase

15.30 **Determining applications of Single Molecule Fluorescence**

- Fluorescence based assays are increasingly pushing sensitivity and miniaturisation towards the yoctomole (single molecule) limit
- Using single molecule techniques offers access to information which cannot be obtained by conventional "bulk" techniques
- Assessing potential applications in areas as widespread as sequencing, genotyping, array technologies, drug discovery and diagnostics

Dr Alex Knight, *Senior Research Scientist, Biotechnology*
NATIONAL PHYSICAL LABORATORY

15.50 **Applying biomagnetics to targeted drug delivery, monitoring and kinetics at the sub-cellular level**

- Understanding how functionalised magnetic nano-particles can be used to monitor and/or stimulate cellular function
- Assessing how coated biomagnets are currently being trialed for targeted drug delivery
- Considering the advent of 'magnetic tweezers' for in-vitro manipulations
- Exploring new opportunities for biomagnetic imaging and diagnostics in sub-cellular response assays and pharmacokinetics

Prof Quentin Pankhurst, *Reader in Physics*
UNIVERSITY COLLEGE LONDON & *Deputy Director*
LONDON CENTRE FOR NANOTECHNOLOGY

16.10 **Examining applications of microfluidics in Point-of-Care Diagnostics**

- Emphasising the advantages associated with miniaturising chemical and biological analysis
- Considering primary characteristics of microfluidic devices
- Establishing routes towards functional integration of analytical processes within chip-based systems
- Establishing applications in areas such as capillary electrophoresis, PCR, DNA analysis, high-throughput screening

Prof Andrew De Mello, *Chemical Nano-sciences*
IMPERIAL COLLEGE LONDON

16.30 **Q&A**

17.45 **Closing remark from the Chair**


17.00 **Further networking opportunity with wine reception**

18.00 **End of conference**


Exploring the commercial potential of Bio-Nanotechnology and Nano-Medicine Registration Form

5 easy ways to register

 www.ltnetwork.org/events.asp

 +44 (0) 870 765 7606

 **London Technology Network**
17 Linhope Street
London NW1 6HT, UK

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 bookings@ltnetwork.org

Registration

To register for the conference, please go to www.ltnetwork.org/events.asp or complete the following booking form and send to Carolyn Seaman, London Technology Network, 17 Linhope Street, London NW1 6HT, UK or fax to +44 (0) 870 765 7606:

Please register me for the conference

Exploring the commercial potential of Bio-Nanotechnology and Nano-Medicine (please tick the appropriate box),
Ref. 302 Bio-Nano

- Early bird special* (by 31 August 2004) £ 150.00 (+VAT = £176.25)
 Commercial £ 200.00 (+VAT = £235.00)
 Academic** £ 75.00 (+VAT = £88.12)

* for commercial rate only

** Academic rate is extended to full-time employees of government, charities and university-affiliated hospitals only.

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See what participants said about previous LTN events:

"I wanted a good snapshot of what's going on in London in the field, and that's what I got"

Philip Sams, *White Space Manager*, UNILEVER

"Very well organised event with excellent speakers"

Nick Heightman, *Senior Vice President BD*, SOSEI LTD.

"I found the event extremely stimulating. I am sure some of the contacts will be of benefit and I will be making arrangements to visit some of the departments in the near future"

Mel Pullen, *Chief Systems Architect*, SYMBIAN

Registration Fees

Costs for the conference are £150 for the early bird special. After 31 August 2004, they are £200. The academic rate is £75. The fees are all exclusive of VAT (17.5%). All payments must be received prior to the conference and should be made within 14 days of booking. Prices include reception, lunch, refreshments and delegate documentation.

Payment methods (required in advance of the conference)

Payments may be made online, by cheque, bank transfer or credit card. Your place will be confirmed once payment has been received. Please tick the appropriate box of your preferred method of payment:

I wish to pay by

- Cheque:** Please make cheques payable in GBP Sterling to **London Technology Network** (please put **Ref. 302 Bio-Nano** on the back of the cheque)
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Conference: 29 September 2004

Institute of Mechanical Engineers

One Birdcage Walk, Westminster, London SW1H 9JJ

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For directions, please go to <http://www.imeche.org.uk/1bcw/>

Delegates are responsible for the arrangement and payment of their own travel and accommodation. Please call 0870 765 7602 to find out more details about the venue.

Cancellations In order to receive any refund, your notice of cancellation must be received in writing (by letter or fax) by 14 September 2004. All cancellations will be subject to a 10% administration fee. Regrettably, no refunds can be made for cancellations received after 14 September 2004. However, substitutions are welcome at any time. If LTN cancels the event, LTN is not responsible for any airfare, hotel or other costs incurred by registrants. Speakers subject to change without notice.

WE LOOK FORWARD TO MEETING YOU!

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