

Advances in Measurement of Nanomaterials and their Impact on Man and the Environment

14th September 2011, Begbroke Science Park, Yarnton, Oxford

Background

Engineered Nanomaterials are now finding use in many different applications that can offer significant business opportunities for new and existing products by increasing performance, replacing toxic alternatives and also completely displacing inferior and wasteful technologies. On the other hand, society is aware of the potential for accidental and intentional release of these nanomaterials leading to human and environmental exposure and so intensive public research and debate has been undertaken in recent years to try to balance this impact with the commercial interest for jobs and growth. This is not an easy task for policy makers who can create or destroy the markets through regulations. However, through the robust use of scientific principle, effective measurement techniques and standardized protocols, a rational dialogue is beginning to emerge to ensure that fair and equitable solutions can be found.

It is critical that a full and effective characterisation of each nanomaterial is conducted to describe what is being used and also to ensure that effective comparisons can be made between toxicity and ecotoxicity datasets on the basis of nanomaterial characteristics. This event has therefore been created to highlight recent advances in the measurement and characterization of nanomaterials through the whole product lifecycle and is complementary to the NanoKTN's recently updated 2011 EHS organisational directory.

The UK is playing a truly international role in providing research capabilities, leadership and rational debate and the organisers have gathered the best in their fields. This event is brought to you by the NanoKTN and supported by the, Materials and Chemistry Innovation KTN's and the National Measurement Office (NMO).

The Event

This one day seminar examines these complex issues and brings together experts in standards, occupational health, toxicity and ecotoxicity together with equipment producers and providers of analytical facilities to present state of the art requirements for effective testing and methods and methodologies to evaluate nanomaterials thoroughly and to the satisfaction of producers through to consumers. There will be a chance to meet the experts and explore business and research opportunities with others through the exhibition and lunchtime networking sessions.

See overleaf for programme.

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Programme

09.30 *Registration & Exhibition*

10.00 **Welcome & Introduction**

Dr James Johnstone, Theme Manager – Metrology, Instrumentation & Standards and Dr Barry Park, Theme Manager – Chemical & Consumer Products, NanoKTN

Session 1: Issues, Requirements and Standards for EHS Measurement and Characterisation

Chair: Dr Colin Johnston, Materials KTN

10.10 **Documentary Standards in Support of Robust Characterization of Nanomaterials**

Dr Peter Hatto, Director of Research, Ionbond Limited

10.30 **Use of Impedance based Measurements to Characterize the Mechanisms of Nanomaterial Toxicology**

Dr Damian Marshall, Principal Scientist, LGC

10.50 **Characterisation of Nanomaterials and Development of Standard Methodologies**

Dr Alison Crossley, Manager, Oxford Materials Characterisation Services (BegbrokeNano)

11.10 *Break, Networking & Exhibition/Posters*

Session 2: Measurements in Gaseous based Matrices

Chair: National Measurement Network

11.40 **Airborne Engineered Nanoparticles in Context: The Atmospheric Nanoparticle Background**

Dr Paul Quincey, Principal Research Scientist - Environmental Measurements, National Physical Laboratory

12.00 **Instrumentation for the Characterisation of Nanoparticles in the air. Current State of the Art**

Brian Steer, Instrument Development Scientist, Naneum

12.20 **Workplace Exposure Measurements of Airborne Engineered Nanoparticles**

Dr Delphine Bard, Senior Scientist, Health & Safety Laboratory (HSL)

12.40 *Lunch, Networking & Exhibition/Posters*

Session 3: Measurement and Characterisation in Liquid based Matrices

Chair: Dr James Johnstone, NanoKTN

13.40 **The Needs and Challenges of Nanomaterials Characterisation**

Dr Steve Hankin, Director of Operations, SAFENANO

14.00 **Title to be confirmed**

Tamara Galloway, University of Exeter / PROSPECT

14.20 **Nanoparticle Aggregation- An Essential Parameter**

Dr Patrick Hole, Development Manager, NanoSight

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14.40 **Nano-characterisation Needs for Medical Applications**
Prof Peter Dobson, Academic Director of Begbroke Science Park,
University of Oxford

15.00 *Break, Networking & Exhibition/Posters*

Session 4: Wider Implications and Applications of Measurement and Characterisation

Chair: Dr Barry Park, NanoKTN

15.20 **Title to be confirmed**
Dr Claus Svendsen, Ecotoxicologist, Centre for Ecology & Hydrology
(CEH)

15.40 **European Center for Nanotoxicology – An Austrian example of a European Hub in Nanotoxicology**
Andreas Falk, Coordinator, BioNanoNet

16.00 **Characterising Manufactured Nanoparticles in the Environment**
Prof Jamie Lead, Professor of Environmental Nanosciences /
Director of FENAC, University of Birmingham

16.20 **Panel Discussion: What are the barriers towards better measurement?**

16.45 **Close**

17.00 **Optional Tour of BegbrokeNano Facilities**

Exhibition

New technologies are beginning to open the door to this nanoscale world and there will be an opportunity to see first hand the capabilities through a stimulating and exciting exhibition. Attendees are encouraged to speak with instrument manufacturers, leading research facilities and government agencies on the issues of measurement for nanomaterials. Instrumentation and research institutes are encouraged to exhibit and meet with potential customers and collaborators.

Exhibitor Package – only £200 +VAT

- 1 delegate pass
- Space for 2 banner stands
- Table for literature and/or product demonstration
- A4 delegate pack insert
- Logo & 50-word Profile on website

To book your place, please select this option on the registration form.

Registration

A **discounted rate** of £60 + VAT will be charged to members of the NanoKTN* and supporting organisations. The standard cost is £90 + VAT.

Organisations and individuals wishing to attend should email a completed registration form to: Natasha.taylor@nanoktn.com.

*Membership to the NanoKTN is free of charge, register at www.nanoktn.com