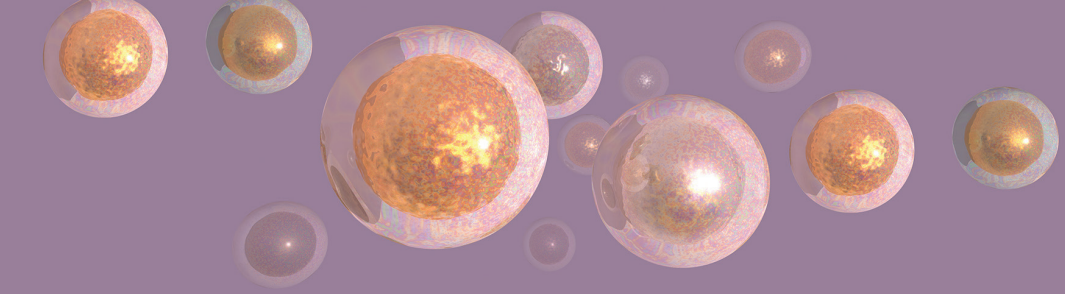


First announcement & call for papers

Workshop

Nanoparticle Concentration, Chemistry and Interfaces

20th-24th April 2015

Peckforton Castle
Cheshire, UK

www.npl.co.uk/np-workshop

Pacific Northwest NATIONAL LABORATORY

CHALMERS UNIVERSITY OF TECHNOLOGY

NPL National Physical Laboratory

Dear Colleagues,

On behalf of the organising committee, I have the pleasure of inviting you to participate in the workshop titled 'Nanoparticle Concentration, Chemistry and Interfaces' which will take place from 20th to 24th April 2015 at Peckforton Castle, Cheshire, United Kingdom.

Particles, particularly those below 100 nm in diameter, are of major interest in the development of new technologies ranging from medical diagnostics to solar cells to drug delivery. In high performance applications of such materials, the tolerances on particle size, shape, chemistry, concentration and distribution are critical. Their growing use has also given rise to some concern over their impact upon health and the environment.

One of the major stumbling blocks in nanoparticle metrology is the lack of reference materials and standardised methods for the reproducible synthesis and sample preparation for analysis. Nanoparticle surface chemistry is a dynamic property which is affected by specific environments and directs nanoparticle behaviour. There is a pressing need to understand, compare and standardise the best methods to design, make and measure the interfacial chemistry of particles. Knowledge of the accurate number concentration of particles is also a pressing concern in regulatory environments, e.g. EU legislation, and no validated or traceable measurement method exists.

Many traditional in-situ *nanoparticle analysis techniques operate in liquids, although significant challenges are faced when measurements are performed in complex media. There are also a number of techniques for nanoparticle surface analysis which operate in vacuum and are useful for* ex-situ *analysis. Advances in these different methods have happened independently and a coherent comparison of them is lacking.*

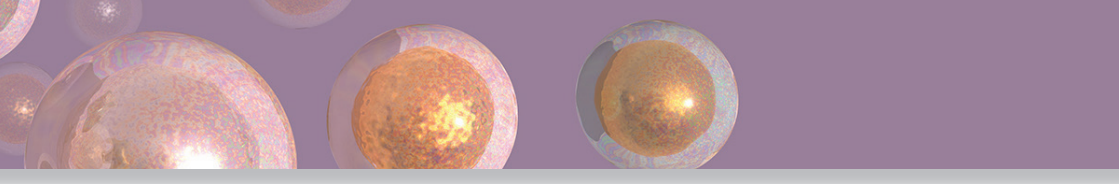
This workshop will provide a unique forum to bring together those communities. It will provide a focus to engage international experts in scientific debate to discuss the advantages and drawbacks of the various methods and the theories by which physically meaningful parameters can be extracted from data.

The outputs of the workshop will be used as input to a variety of international efforts related to measurements of nanomaterials including national standards organisations, VAMAS and ISO Technical committees on Nanotechnology and Surface Chemical Analysis.

We sincerely hope that you will join us in making our workshop a success. We look forward to welcoming you at Peckforton Castle, Cheshire, UK.

Sincerely,

Caterina Minelli
Workshop Chair



Workshop format

This workshop is a forum where experts share their own opinions and discuss state-of-the-art problems and issues. It is a place to encourage open communication between scientists and engineers. The workshop will include in-depth keynote presentations, oral and poster contributions and ample space will be given to discussions of the various topics. A special wine reception will be held on Monday evening in the cellar of the castle. An excursion and a banquet will be organised on the Wednesday.

Topics included

The workshop will:

- Examine the span of needs in nanoparticle metrology and best practices for reproducible synthesis and sample preparation for analysis.
- Assess the accuracy and limitations of methods providing measurements of number concentrations of particles.
- Evaluate the current ability to design, synthesise and measure/characterise the surface or interfacial chemistry of particles.
- Discuss the relative importance, strengths and limitations of *in situ* versus other methods of detection and analysis.
- Identify needs and potential pathways to address current limitations in methods, reference materials and methodology.

Invited speakers

We are delighted to announce that the following leading experts have confirmed they will provide in-depth insights to the issues of measuring nanoparticle concentration, surface chemistry and interfaces:

- **Prof Thomas L Andresen**, Technical University of Denmark
- **Prof David Castner**, University of Washington, USA
- **Dr Tommy Cedervall**, Lund University, Sweden
- **Dr Victoria Coleman**, National Measurement Institute, Australia
- **Prof Shalini Gupta**, Indian Institute of Technology Delhi, India
- **Dr Michael Krumrey**, Physikalisch-Technische Bundesanstalt, Germany
- **Dr Douglas Gilliland**, European Commission, JRC-IHCP, Italy
- **Prof Katharina Landfester**, Max Plank Institute, Germany
- **Dr Scott E. McNeil**, Frederick National Laboratory, USA
- **Prof Dae Won Moon**, Daegu Gyeongbuk Institute of Science and Technology, Korea
- **Prof Richard Palmer,** University of Birmingham, UK
- **Dr Ute Resch-Genger**, Federal Institute for Materials Research and Testing, Germany
- **Dr Gert Roebben**, European Commission, JRC-IRMM, Belgium
- **Prof Ed Sacher**, École Polytechnique de Montréal, Canada
- **Dr Alex Shard**, National Physical Laboratory (UK)
- **Dr Chady Stephan**, Perkin Elmer, Canada
- **Prof Wolfgang Werner**, Vienna University of Technology, Austria

Workshop venue

The workshop will be held at Peckforton Castle (www.peckfortoncastle.co.uk), Cheshire, UK. It is in a relatively remote and rural area, but with easy access from Manchester international airport. The Castle is approximately 15 miles from Chester Station (Chester is two hours by train from London Euston station). The nearby Beeston castle and the historic roman and medieval town of Chester will provide interesting mid-conference excursions.

Registration & call for papers

Due to the limited number of places, please register your interest in receiving an invitation to attend the workshop from the organising committee by contacting us or checking the workshop website for further details (deadline 19th December 2014).

Registration will open for invitees in early January 2015. The workshop registration fee covers workshop delegate pack, refreshments, lunches, excursion, reception in the castle wine cellar (Monday night) and workshop formal banquet (Wednesday night).

Early Bird Registration (by 15th February 2015)	**£325**
Full Registration	**£400**
Accommodation at the majestic Peckforton Castle for four nights includes all breakfasts (21st to 24th April) and evening meals (20th to 24th April).	
Single occupancy	**£475**
Double occupancy (per person)	**£380**
Accompanying person:	
Shared room accommodation, including breakfasts and dinners	**£260**
Excursion	**£25**
Banquet	**£25**

All prices include VAT

Workshop organising committee

Chair:	Caterina Minelli (National Physical Laboratory, UK)
Co-chairs:	Don Baer (Pacific Nortwest National Laboratory, USA) Giacomo Ceccone (European Commission, JRC-IHCP, Italy) Fredrik Höök (Chalmers University, Sweden)
Local organisation:	Natalie Belsey (National Physical Laboratory, UK)

Further information

www.npl.co.uk/np-workshop E-mail: nanoparticleworkshop@npl.co.uk, Tel: +44 20 8943 6689/6330

This workshop is endorsed by IUVSTA and the British Vacuum Council.

IOP Institute of Physics

IUVSTA

BVC The British Vacuum Council

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