ADVANCES IN PARTICULATE MATERIALS CHARACTERISATION USING SORPTION PROBES

FREE PRESENTATION



Date: 20-22 October 2014

Mon 20 Oct	**Melbourne**	10am-12pm	*Monash University, Bld 404, Parkville campus, Level 5, Room 5.05, Large Meeting Room.*
Tues 21 Oct	**Brisbane**	1-3pm	*The University of Queensland, Australian Institute for Bioengineering and Nanotechnology (AIBN) Level 1, Seminar Room.*
Wed 22 Oct	**Sydney**	10am-12pm	*University of Sydney, Pharmacy Building A15, The Common Room.*

We are happy to invite you to participate in our Australian presentation,

"ADVANCES IN PARTICULATE MATERIALS CHARACTERISATION USING SORPTION PROBES".

This presentation will be held from 20th-22nd October 2014 and is an excellent opportunity to meet a specialist in the field of Sorption Science from Surface Measurement Systems (SMS) based in the UK.

Presentation content:

Measuring the surface energy of powders, fibres or films is crucial to understanding how they interact with other liquids and solids, for example how strongly particles adhere together, or how strongly a liquid will bind to a surface.

Traditionally, surface energies are measured by liquid wetting angle techniques, however these can be difficult to implement reproducibly on free flowing powders.

Inverse Gas Chromatography (iGC) readily lends itself as a technique to measure the surface energies of powders since it does not involve liquid wetting and therefore does not require compression of the particles. The SMS iGC SEA instrument also allows for the first time the measurement of surface energies as a function of humidity.

Dynamic Vapour Sorption (DVS) is a valued tool for the study of compound stability and surface sorption effects of water and organic vapours. The DVS Instrument was developed as a response to the researcher's need for fast and effective analytical methods to determine a material's moisture content and related sorption isotherms. Before the invention of the DVS, water sorption isotherms were obtained from a process known as the "Jar Method" or desiccator method. It was a slow and tedious process that took weeks, if not months, to achieve results.

This talk will review the applications and successes of sorption based approaches for materials characterisation. We will discuss the principles of inverse Gas Chromatography (iGC) and Dynamic Vapour Sorption (DVS) techniques and the properties that can be measured. The benefits of DVS and iGC will be discussed and compared to other known techniques such as contact angle and AFM. Further advances and developments will be illustrated including the recent hyphenation of DVS with both Raman spectroscopy and video microscopy.

Duration:

The presentation will be divided into two 45min sessions, with a break in the middle for tea/coffee and refreshments.

About the Speaker:

Dr. Daryl R. Williams, graduated with a B.Sc. (Hons) from University of Melbourne, Australia and a M.Sc. in Polymer Science from Lehigh University, USA. After completing his PhD in Composite Interfaces at the Imperial College London he was appointed an EPSRC Advanced Research Fellow. He was subsequently appointed a Senior Lecturer in Chemical Engineering in Imperial College London and is currently the Director of the Discovery Space and a Reader in Particle Science.

Daryl has published over 70 papers in refereed journals and been granted international 5 patents. He is the founder of Surface Measurement Systems Ltd (SMS) and inventor of the Dynamic Vapour Sorption method. SMS is the technological market leader in advanced vapour sorption instruments for materials characterisation.

His research interests include the surface and bulk characterisation of complex organic solids, including especially bio-pharmaceutics, as well as their manufacture using spray drying, crystallisation, freeze drying, milling and granulation. His work also includes an important focus on novel and new instrumentation for materials characterisation. His research work has been sponsored by major industrial companies and government organisations including EPSRC, BBSRC, Pfizer, Astra-Zeneca, Kellogg's, Unilever, P&G, Avecia and GSK.

Registration:

Participation is free of charge however **it is essential to register**. You can register by completing the **registration form** on our web site or by sending us an email with your details to **enquiries@atascientific.com.au**. **RSVP by 19th October 2014.**

These seminars are designed to be educational and will be tailored to the interests of the audience. For this reason, we will require all attendees to list application interests during the registration process in the comments section to ensure the content is relevant to you.

Please select from the following application areas, which is of interest to you:

- ☐ Agrichemicals
- ☐ Bio and Natural Materials
- ☐ Catalysts, Fibers and Fillers
- ☐ Food and Fine Chemicals
- ☐ Nano and Porous Materials
- ☐ Pharamaceuticals
- ☐ Polymers and Packaging
- ☐ Other (please list).....□

Registration Form:

NAME:
ORGANISATION:
DEPARTMENT:
EMAIL:
PHONE:
DATE & SESSION PREFERED: