

# APACT 10

**ADVANCES IN PROCESS ANALYTICS  
AND CONTROL TECHNOLOGIES  
2010 CONFERENCE**

## *Programme*

**Wednesday 28 April -  
Friday 30 April, 2010**

**The Hilton Hotel  
Deansgate, Manchester**



CENTRE FOR PROCESS ANALYTICS AND CONTROL TECHNOLOGIES

## APACT 10

**THERE'S MONEY TO BE MADE IF PROCESS ANALYSIS AND CONTROL ARE INTEGRATED PROPERLY.**

**SUCCESSFUL USE OF PROCESS ANALYSIS AND CONTROL INVOLVES MANY TECHNOLOGIES - IT IS TRULY A MULTIDISCIPLINARY ACTIVITY.**

Process analysis and control technologies are increasingly important to manufacturing companies in the pharmaceuticals, chemicals, petrochemicals, biotechnology, food and other industries. The financial, safety and environmental benefits of Process Analysis and Control (PAC) are proving powerful incentives and increasing numbers of companies want to participate in the PAC revolution. In-process measurements and real-time data analysis are also increasing in importance at the discovery and development stages, when attempting to reduce time-to-market through “quality by design”, achieved by acquisition of better fundamental knowledge of a process.

APACT 10 is an open forum for the presentation and discussion of recent advances in engineering and scientific topics relevant to process analytics and control technologies. Plenary and keynote speakers will describe the formulation and implementation of PAC strategies, review the benefits that can be achieved, and report recent developments. Following the success of previous conferences, APACT 10 will be a three-day meeting featuring plenary and parallel sessions on topics crucial to the achievement of manufacturing excellence.

The conference is open to all interested participants and will provide opportunities for academics and industrialists to present their knowledge and research to an informed multi-disciplinary audience. The programme will include contributed lectures, poster presentations and a vendor exhibition. The meeting is an ideal forum for networking and information gathering on PAC. Those new to process analysis or process control will benefit from the friendly atmosphere that typifies an APACT conference.

Registration costs include lunches, dinner on two evenings, and a social programme. There will be a reduced-cost student fee to encourage participation of younger researchers.



## WEDNESDAY, 28 APRIL 2010

- 09.30-10.00 **Registration and Coffee**  
10.00-10.10 **Welcome**  
10.10-11.00 **Plenary 1**  
**Supply chain optimisation in the process industries**  
Nilay Shah, Imperial College London, UK
- 11.00-11.40 **Keynote 1**  
**Lean transformation in engineering support to nuclear reprocessing and waste treatment**  
John Chappell, Sellafield Ltd, UK
- 11.40-12.20 **Keynote 2**  
**e-Agri: Exploiting on-line sensing and ICT to change the rule of the game for global agriculture and food security**  
Bruce Grieve, The University of Manchester, UK
- 12.20-13.20 **Lunch**  
13.20-14.00 **Exhibition and Posters**  
14.00-14.40 **Keynote 3**  
**PAT - from concept, through filing and into real life manufacturing**  
Jonathan Hammond, GlaxoSmithKline, UK
- 14.40-15.20 **Keynote 4**  
**In-line analysis (PAT) in drug substance development**  
Kevin Sutcliffe, AstraZeneca, UK
- 15.20-15.50 **Tea/Coffee and Exhibition/Posters**

### PARALLEL SESSIONS

- |             | <i>Non-invasive analysis</i>  | <i>Process performance monitoring</i>  |
|-------------|---|--|
| 15.50-16.20 | <b>Non-invasive transmission Raman analysis for rapid content quantification of pharmaceutical formulations</b><br>Darren Andrews, Cobalt Light Systems Ltd, UK | <b>Systematic method and tool for design, analysis and/or validation of PAT systems</b><br>Ravendra Singh, CAPEC, Technical University of Denmark, Denmark |
| 16.20-16.50 | <b>Powder drying: particle size and solvent effects in NIR and Raman spectroscopy</b><br>Peter Hamilton, CPACT Strathclyde, UK                                  | <b>Performance monitoring in waste vitrification plants</b><br>Katy Ferguson, CPACT Newcastle/NNL, UK  |
| 16.50-17.20 | <b>Monitoring of resin and additive distribution in wood particle mats using NIR spectral imaging</b><br>Burkhard Plinke, Fraunhofer WKI, Germany               | <b>When is a batch not a batch?</b><br>Dave Lovett, Perceptive Engineering, UK   |
| 17.20-18.15 | <b>Free time</b>  |  |
| 18.15-19.00 | <b>Exhibitors showcase presentations (inc. refreshments)</b>  |  |
| 19.00       | <b>Dinner</b>   |  |
| 20.30       | <b>Social activity</b>  |  |

## THURSDAY, 29 APRIL 2010

- 09.00-09.50 **Plenary 2**  
**Multi-modal optical spectroscopy - The missing link between first principles and correlative PAT?**  
Rudolf Kessler, Reutlingen University, Germany
- 09.50-10.30 **Keynote 5**  
**Representative process sampling (Theory of Sampling, TOS) - the missing link in PAT**  
Kim Esbensen, Aalborg University, Denmark
- 10.30-10.50 **Tea/Coffee and Exhibition/Posters**

### PARALLEL SESSIONS

- |             | <i>Multivariate data analysis for process monitoring</i>  | <i>Optical process spectrometry</i>   |
|-------------|---|---|
| 10.50-11.20 | <b>Application of multiple in- and on-line sensor devices combined with MVDA for advanced bioprocess monitoring as a supporting tool for the FDA's PAT initiative</b><br>Markus Luchner, University of Natural Resources & Applied Life Sciences, Austria | <b>Fiber spectroscopy for clear process vision</b><br>Viacheslav Artyushenko, Fibre Photonics, Berlin   |
| 11.20-11.50 | <b>Applications in design of experiments for optical production of recombinant proteins with <i>Pichia pastoris</i></b><br>Reiner Luttmann, Hamburg University of Applied Sciences, Germany   | <b>Improvements in mid-infrared ATR probe technology for in-situ process measurements</b><br>Allyson McIntyre, CPACT Strathclyde, UK  |
| 11.50-12.20 | <b>Identification of raw materials using multivariate methods</b><br>Frank Westad, CAMO Software, Norway  | <b>A novel approach for process optimisation in microreactors based on flow rate manipulation and real-time non-invasive measurements</b><br>Sergey Mozharov, CPACT Strathclyde, UK |

## THURSDAY, 29 APRIL (Cont'd.)

12.20-13.20 Lunch

13.20-14.00 Exhibition and Posters

14.00-14.40 Keynote 6

**Applications of stochastic distribution control for chemical plants**

Hong Wang, University of Manchester, UK

### PARALLEL SESSIONS

#### *Process diagnostics & performance monitoring*

#### *Industrial applications of process analysis*

14.40-15.10 **Practical industrial application of process diagnostics**

Alan Mason, AJM Consulting, UK

**Investigation into the use of acoustic techniques for on-line diagnosis of vitrification plant rabble bar status**

Dave Dungate, Tessella plc, UK

15.10-15.40 **Multivariate image analysis, histogram matching, statistical process control chart and acoustic signal assisted nucleation detection for pharmaceutical crystallisation processes**

Levente Simon, ETH Zurich, Switzerland

**Fast and accurate on-line monitoring of fuel gases by process mass spectrometry**

Robert Wright, Thermo Fisher Scientific, UK

15.40-16.10 **Tea/Coffee and Exhibition/Posters**

16.10-16.40 **Development of a diagnostic system for the detection of coke oven through-wall leakage**

Mansour Saiepour, Corus UK Ltd, UK

**Microwave resonance technology (MWR) in process control: A moisture detection method with exciting prospects**

Jochen Scholz, Sartorius AG, Germany

16.40-17.10 **Finding root-cause process problems with process interaction mapping**

Peter Thomas, Control Specialists Ltd, UK

**In-line particle size analysis for high shear granulation processes**

Jarvis Jeejing, Malvern Instruments Ltd, UK

17.10-18.10 Free time

18.10-19.00 Exhibitors showcase presentations (inc. refreshments)

19.00 Conference dinner and entertainment

## FRIDAY, 30 APRIL 2010

### *Process Tomography*

09.00-10.00 Plenary 3

**Improving particulate processes via ultrasonic spectroscopy**

David Scott, DuPont Company, USA

10.00-10.40 Keynote 7

**High-speed chemical species tomography in hostile environments**

Hugh McCann, University of Manchester, UK

10.40-11.10 **Tea/Coffee and Exhibition/Posters**

11.10-11.50 Keynote 8

**Process tomography in catalyst development and formulation**

Hugh Stitt, Johnson Matthey, UK

11.50-12.20 **On-line multi-modal characterisation of flow and structure in complex materials**

Richard Tweedie, Industrial Tomography Systems, UK

12.20-12.30 **Closing remarks**

12.30 Lunch and close

## Conference Venue

APACT 10 will take place at the Hilton Manchester Deansgate Hotel. Housed in the Beetham Tower, Manchester's first skyscraper, the hotel is a spectacular destination in one of Europe's most vibrant and dynamic cities. The Hilton Manchester Deansgate is only a few minutes walk from Deansgate Rail Station and St Peter's Square metrolink station. Victoria Station and Piccadilly Station are a short drive away. Manchester International Airport is only 25 minutes by road.

The hotel provides breathtaking views over the city, which features superb shopping, vibrant nightlife, world-leading architecture and a rich history. And in the heart of it all, the Hilton Manchester Deansgate takes centre stage. All bedrooms are of a high standard and include high speed internet access. For extra pampering at the LivingWell health club, take a swim under the stars in the heated indoor pool, spectacularly housed in lustrous glass and steel. Enjoy a workout on the latest cardiovascular and resistance equipment, relax in the sauna or steam room, or indulge in the wide range of pampering beauty treatments at Heaven Spa.

If you have time to spare in Manchester before or after the conference, then Manchester is the perfect walking city to explore a mixture of old and new architecture set side by side. There's a multitude of things to do in and around Manchester, including over 90 museums and galleries, most of which are free to enter. Visit the Lowry, Imperial War Museum North, Urbis, The Museum of Science and Industry, Manchester Art Gallery, museum and stadium tours at Manchester United and Manchester City football clubs and many more.

Manchester also offers the perfect gateway to the North of England, a region that packs a diverse combination of history, culture, scenery and more. Delve into the rich heritage of cities such as Chester, York and Liverpool or discover the stunning countryside of the Lake District.

### Travel to the Hilton Hotel -

**Air:** Manchester International Airport is approximately 25 minutes drive.

**Road:** Easily accessible from M6, M62 and A1.

**Rail:** Only a few minutes walk from Deansgate Station and Victoria and Piccadilly Stations are less than one mile away.





**ON LINE REGISTRATION IS  
AVAILABLE AT [www.apact.co.uk](http://www.apact.co.uk)**



**APACT 10 CONFERENCE REGISTRATION FORM**

	<b>On or before 26.02.10</b>	<b>After 26.02.10</b>
Registration Fee (CPACT members)	<input type="checkbox"/> £540*	<input type="checkbox"/> £590
Registration Fee (non-members)	<input type="checkbox"/> £640*	<input type="checkbox"/> £690
Student Discounted Registration Fee	<input type="checkbox"/> £199	<input type="checkbox"/> £199

\* Discounts available for more than 2 registrations per organisation. Please contact Natalie Driscoll for more details: [natalie@cpact.com](mailto:natalie@cpact.com)

**Due to a change in regulations, this conference is now VAT exempt.**

The above fees include the abstract book, CD of presentations and tea/coffee and lunch during the three days of the conference. Dinner on Wednesday 28 April and a special conference dinner on Thursday 29th April are also included. Fees are refundable only up to two weeks before the event. Substitution may be made at any time.

**ACCOMMODATION** has been reserved at a special rate at the Hilton Manchester Deansgate, 303 Deansgate, Manchester, M3 4LQ. Telephone no: +44 (0)161 8701600. Website: [www.hilton.co.uk/manchesterdeansgate](http://www.hilton.co.uk/manchesterdeansgate). Please tick boxes below for room reservations.

**IMPORTANT: Room rate to be paid to CPACT with registration fee.**

Tuesday 27 April	<input type="checkbox"/>	B&B rate £110
Wednesday 28 April	<input type="checkbox"/>	B&B rate £110
Thursday 29 April	<input type="checkbox"/>	B&B rate £110

NB: Accommodation is VAT exempt when booked through CPACT.

**METHOD OF PAYMENT**

Please indicate method of payment below. Cheques should be enclosed and made payable to: 'University of Strathclyde' and drawn on a British Bank in GBP.

Visa    
  Mastercard    
  Amex    
  D.Club    

Switch/Maestro    
  Solo    
  Visa Debit    
  Cheque    

Card No

Security code (CVC No) - **A member of the University Cash Office will contact you for this number**

Expiry Date        
 Start Date        
 Issue number   (Switch/Solo only)

Cardholder's name as shown on card .....

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Contact telephone number .....

Amount payable £ .....

Signature of card holder .....

**Delegate attending the conference:**

Name ..... Organisation .....

Address .....

..... Postcode .....

Telephone ..... Fax ..... e-mail .....

**Register on-line at [www.apact.co.uk](http://www.apact.co.uk) or return completed form to:**

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