



**ADVANCES IN PROCESS ANALYTICS
AND CONTROL TECHNOLOGIES
2009 CONFERENCE**

Programme

**Tuesday 5 May -
Thursday 7 May, 2009**

**The Hilton Hotel
Glasgow**



CENTRE FOR PROCESS ANALYTICS AND CONTROL TECHNOLOGIES

APACT 09

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 better fundamental knowledge of a process.*

APACT 09 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 in Glasgow, York, Bath, Birmingham, Oxford and Edinburgh, APACT 09 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.



TUESDAY, 5 MAY 2009

- 09.30-10.00 **Registration and Coffee**
10.00-10.10 **Welcome**
10.10-11.00 **Plenary 1**
Bridging science and regulation - the PAT (r)evolution in the pharma industry
Staffan Folestad, AstraZeneca, Sweden.
- 11.00-11.40 **Keynote 1**
The challenges and opportunities for PACT in formulated consumer products manufacturing
Andrew Bayly, Procter and Gamble, China.
- 11.40-12.20 **Keynote 2**
Driving the development of PAT
Alvaro Diez Lazaro, Dow, The Netherlands.
- 12.20-13.20 **Lunch**
13.20-14.00 **Exhibition and Posters**
14.00-14.40 **Keynote 3**
Terahertz measurement of material properties for process control
Irl Duling, Picometrix, USA.
- 14.40-15.20 **Keynote 4**
Reactive Raman and FTIR systems in very small packages
Christopher D. Brown, System Analytics and Applications, Ahura Scientific, USA.
- 15.20-15.50 **Tea/Coffee and Exhibition/Posters**

PARALLEL SESSIONS

- | | <i>Process monitoring and control</i> | <i>Novel optical probes</i> |
|-------------|---|--|
| 15.50-16.20 | Re-defining and simplifying "advanced process control"
Marie O'Brien, Perceptive Engineering Ltd, UK. | Optical fibre spectroscopy solutions from 550 cm⁻¹ to 55500 cm⁻¹ for process analysis
Viacheslav Artyushenko, Fibre Photonics, UK. |
| 16.20-16.50 | Enhancement of the waste vitrification plants product container processing by statistical process control
Chris Brookes, Sellafield Ltd, UK. | Toward real-time quality assurance with the Lighthouse Probe
Andrey Bogomolov, J&M Analytik AG, Germany. |
| 16.50-17.20 | ICAS-PAT: A new software tool for systematic design/validation of process monitoring and analysis systems (PAT systems)
Ravendra Singh, Technical University of Denmark, Denmark. | Multimodal-spatially resolved spectroscopy for the analysis of scattering systems
Rudolf W Kessler, Reutlingen University, Germany. |
| 17.20-18.15 | Free time | |
| 18.15-19.00 | Exhibitors showcase presentations (inc. refreshments) | |
| 19.00 | Dinner | |
| 20.30 | Social activity | |

WEDNESDAY, 6 MAY 2009

- 09.00-09.50 **Plenary 2**
Advances in multivariate curve resolution and hybrid hard- and soft- modelling approaches for process analysis
Anna de Juan, University of Barcelona, Spain.
- 09.50-10.30 **Keynote 5**
Improving process understanding through data analysis
Alan Brown, Syngenta, UK.
- 10.30-10.50 **Tea/Coffee and Exhibition/Posters**

PARALLEL SESSIONS

- | | <i>Converting data to knowledge</i> | <i>Monitoring of crystal formation</i> |
|-------------|--|---|
| 10.50-11.20 | Turning data into knowledge
Chris Hobbs, ABB PAT Regional Centre, UK. | Particle formation processes in pharmaceutical crystallisation
Jan Sefcik, University of Strathclyde, UK. |
| 11.20-11.50 | Development of an innovative process diagnostics system for real-time detection and cause identification
Alan Mason, AJM Consulting, UK. | Bulk video imaging and comparison to FBRM and UV/VIS spectroscopy for crystallization nucleation detection
Levente Simon, ETH Zurich, Switzerland. |
| 11.50-12.20 | Machinery predictive analytics - predicting & preventing equipment breakdowns
Zaid Rawi, BP Refining Technology, UK. | The use of multi-variate analysis and material attribute data to improve the particle formation step in API manufacture
Paul Slavin, GlaxoSmithKline, UK. |

WEDNESDAY, 6 MAY (Cont'd.)

- 12.20-13.20 Lunch
- 13.20-14.00 Exhibition and Posters
- 14.00-14.50 **Plenary 3**
Sustainability through green processing
Volker Hessel, Institut für Mikrotechnik Mainz, Germany.
- 14.50-15.30 **Keynote 6**
Process development and industrial production using micro reactors
Philippe Caze, Corning, France.
- 15.30-15.50 Tea/Coffee and Exhibition/Posters

PARALLEL SESSIONS

Flow reactors

Laser scattering and particle analysis

- 15.50-16.20 **Oscillatory baffled mesoreactors for laboratory-scale process development**
Adam Harvey, University of Newcastle, UK.
- 16.20-16.50 **Continuous reactors - from lab development to scale-up studies**
Gilda Gasparini, AM Technology, UK.
- 16.50-17.20 **A compact Raman probe for rapid reaction monitoring in micro reactors**
Sergey Mozharov, University of Strathclyde, UK.
- 17.20-18.15 Free time
- 18.15-19.00 Exhibitors showcase presentations (inc. refreshments)
- 19.00 Conference dinner and entertainment
- 15.50-16.20 **On-line monitoring of food processes using subsurface laser scattering**
Jens Michael Carstensen, Technical University of Denmark, Denmark.
- 16.20-16.50 **Using real-time particle size analysis to improve process economics**
David Pugh, Malvern Instruments, UK.
- 16.50-17.20 **QICPIC & PICTOS or PICTIS = (PIC)³ dynamic image analysis for lab & process**
Axel Pankewitz, Sympatec GmbH, Germany.

THURSDAY, 7 MAY 2009

- 09.00-09.40 **Keynote 7**
PAT - Biologics development and manufacturing
Bo Kara, Avecia, UK.
- 09.40-10.20 **Keynote 8**
Quality by design in the pharmaceutical industry - the role of multivariate analysis
Theodora Kourti, GlaxoSmithKline.
- 10.20-11.00 Tea/Coffee and Exhibition/Posters

PARALLEL SESSIONS

Developments in on-line gas analysis

Analysis of pharmaceutical powders and tablets

- 11.00-11.30 **Developments in non-invasive on-line gas analysis for combustion control**
Sam Langridge, Ametek Process Instruments, UK.
- 11.30-12.00 **Ion mobility spectrometry for on-line and non-invasive quality and process control**
Wolfgang Vautz, ISAS, Germany.
- 12.00-12.30 **Industrial applications of process mass spectrometry**
Hans-Erhard Zimmer, InProcess Instruments GmbH, Germany.
- 12.30-12.40 **Closing remarks**
- 12.40 **Lunch and close**
- 11.00-11.30 **Improving process understanding and process control by NIR and MVDA models in pharmaceutical production**
Lorenz Liesum, Novartis Pharma, Switzerland.
- 11.30-12.00 **Near infrared analysis as a non-invasive process analytical technology (PAT) tool for pharmaceutical blending**
Sheelagh Halsey, Thermo Scientific, UK.
- 12.00-12.30 **PhAT Raman analysis of pharmaceutical tablets**
Nicci Townshend, University of Strathclyde, UK.

Conference Venue

APACT 09 will take place at the Hilton Hotel, which is a stunning 20 storey landmark building at the heart of the city, less than a mile from Central and Queen Street train stations and only 8 miles from Glasgow Airport.

The hotel provides stunning views of this vibrant city, which combines Victorian elegance and modern architecture and ideas. For extra pampering and relaxation you can take advantage of a wide range of health and beauty treatments at the fully equipped spa which offers a superb indoor swimming pool, invigorating spa bath, steam room, sauna and fitness suite. All bedrooms are of a high standard and include high speed internet access.

If you have time to spare in Glasgow before or after the conference, then the city centre is surrounded by many cultural attractions. Glasgow has an excellent selection of more than twenty museums and art galleries, many of which are free. Close by, in Royal Exchange Square, you will find the contemporary Gallery of Modern Art which displays works by local and international artists. Just across the river Clyde, lies the Glasgow Science Centre which comprises the IMAX Cinema, Science Mall, Glasgow Tower, Planetarium and Virtual Science Theatre. The Glasgow Hilton is also perfectly situated for exploring the city's shops ranging from a variety of high street chains to exclusive chic boutiques.

Only half an hour from the city centre, delegates will find themselves worlds apart from the bustle and excitement of Glasgow. A host of activities of a different sort are on offer, from the watersports of Loch Lomond and the Trossachs, the forest walks in Argyll, to the scenic resorts of the River Clyde and Ayrshire Coast.



Travel to the Hilton Hotel -

Air: Glasgow Airport is 20 minutes drive and Edinburgh Airport is approximately a 1 hour drive

Road: Easily accessible from the M8 motorway

Rail: Glasgow Central and Queen Street stations are less than a mile from the Hilton Hotel.





**ON LINE REGISTRATION IS
AVAILABLE AT www.apact.co.uk**



APACT 09 CONFERENCE REGISTRATION FORM

	On or before 27.02.09	After 27.02.09
Registration Fee (CPACT members)	<input type="checkbox"/> £540* inc. vat	<input type="checkbox"/> £590 inc. vat
Registration Fee (non-members)	<input type="checkbox"/> £640* inc. vat	<input type="checkbox"/> £690 inc. vat
Student Discounted Registration Fee	<input type="checkbox"/> £199 inc. vat	<input type="checkbox"/> £199 inc. vat

* Discounts available for more than 2 registrations per organisation. Please contact Natalie Driscoll for more details: natalie@cpact.com

The above fees include proceedings, coffee and lunch during the three days of the conference. Dinner on Tuesday 5 May and a special conference dinner on Wednesday 6 May 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 the Hilton Hotel, 1 William Street, Glasgow, G3 8HT. Telephone no: +44(0)141 204 5555. Website: www.hilton.co.uk/glasgow
Please tick boxes below for room reservations.

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

Monday 4 May	<input type="checkbox"/>	B&B rate £110 inc. vat
Tuesday 5 May	<input type="checkbox"/>	B&B rate £110 inc. vat
Wednesday 6 May	<input type="checkbox"/>	B&B rate £110 inc. vat

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) (last three digits on reverse of card)

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

Cardholder's name as shown on card

Cardholder's statement address

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 or return completed form to:

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