

# CHEMICAL ENGINEERING DECEMBER 2008

## IN AUSTRALIA

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EDITOR: Dietrich Georg – dgeorg@engineersmedia.com.au

## NEWS

### Advances in nanotechnology

Nanotechnology will make a major contribution to the development of a solar based economy, away from the present carbon based one, according to Professor Max Lu, head of the ARC Centre for Functional Nanomaterials at the University of Queensland.

"Nanomaterials engineered at the molecular level will lead to breakthrough technologies in energy, environment and sustainable transport," he predicted in his keynote address at the recent Chemeca conference in Newcastle.

For instance, nanomaterials will have applications in hydrogen production and storage, fuel cells, supercapacitive batteries and high efficiency-low cost solar cells.

High-temperature membranes could be used as molecular sieves for H<sub>2</sub>/CO<sub>2</sub> separation for hydrogen production and carbon dioxide capture, as well as for purification of fuel cell feedstock.

Catalysed MgH<sub>2</sub> systems could be used for high-capacity hydrogen storage.

Low cost solar cells could be achieved through eliminating silicon as the base material. Instead, photoelectrochemical cells based on dye sensitisation could be



*Prof Max Lu predicts breakthroughs in energy, environment and sustainable transport.*

used. The reactive material would be single-crystals of TiO<sub>2</sub>.

Such cells, developed by Australian company Dyesol, at present achieve 6% to 7% efficiency, which would already be commercially viable because the cell manufacture is very cheap, Lu said.

Dyesol has just opened a new manufacturing facility in Queanbeyan near Canberra to fast track the commercialisation of its technology.

This facility, together with another one in North Wales, UK, will enable Dyesol to service its collaboration partners and subsidiary companies operating in Britain, Italy, Switzerland, Korea, and Singapore, the company said.

In the water area Lu sees major applications of nanomaterials in desalination and recycling.

His centre is working on several research projects in all these areas.

As nanotechnology is exploring uncharted territory, it is important that potential health risks associated with it are investigated concurrently, Lu said, adding that some of his centre's research is dedicated to this.

He said annual global investment in nanotechnology is about \$12 billion, with the US and Japan spending most of this. The Australian government invests some \$100 million a year in nanotechnology, including its support for the Australian National Fabrication Facility ([www.anff.org.au](http://www.anff.org.au)), which links seven university-based nodes to provide researchers and industry with access to state-of-the-art fabrication equipment.

Established last year, the facility was officially opened by Kim Carr, the federal minister for innovation, industry, science and research two months ago.

### Floating LNG plant considered

Woodside Petroleum is considering building a floating liquefied natural gas plant in East Timorese waters to escape from the proposed emissions trading scheme (ETS). The plant would process the gas from the Sunrise field.

Speaking to investors on 13 November, managing director Don Voelte said the company may use a floating facility to process gas from the Sunrise field. "I wonder if the ETS is applicable to a vessel sitting in Timor-Leste waters," he said.

As an alternative to the floating facility, the company is considering processing the gas via a second train at the

ConocoPhillips plant in Darwin.

Woodside is also thinking about accelerating the construction of a second train for the Pluto project at Karratha in Western Australia.

The company is tossing up between Karratha and the Kimberley as the location of a facility to process gas from the Browse basin.

A critic of ETS, Voelte said that natural gas is the cleanest energy source for the transition between fossil fuels and new forms of energy.

He predicted that gas will power the world for the next 20-40 years.

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## NEWS

### Industry's future lies in conceptual design

Australian chemical engineering services firms of the future would mostly do conceptual design. This prediction is continued in a paper presented by Steven van Wagenveld from engineering and project delivery contractor Uhde Shedden (Australia) at the recent Chemeca conference in Newcastle.

The paper titled "The future of Australian engineering services" said engineering consultancies have been setting up branches in countries like India, the Philippines and Thailand where detailed design for large international projects can be done at lower cost. The engineering capabilities of these countries are likely to increase over time. Even Australian projects would have more engineering work done overseas, the paper predicted.

In addition, Australia's continuing skills shortage would make it less competitive in bidding for detailed design work, the paper said. While there are various strategies to increase the number of designers – such as training graduate engineers to do design work – they are not enough. "Irrespective of how successful we are in building numbers of personnel, there will be a net loss of design skill from the Australian industry," the paper said.

As a result, Australian engineers would be working increasingly on the early con-

ceptual or prefeasibility stages of large, international projects. "They will therefore need to routinely work-share with lower cost international engineering centres, using a variety of scope split models, some of which we would have considered suboptimal or even unworkable until recently," the paper said.

Nevertheless, the paper predicted that Australian engineers would still command relatively high fees on an international scale.

If these predictions come true, they will

change the way Australian engineering firms operate. "To achieve the best results, the focus needs to shift from traditional productivity norms to an environment of fast response and informed decisions that get results without the need for extensive investigation," the paper said.

The paper warned that, by focusing on conceptual design, engineers may lose touch with the reality of how plants operate. This could be cured by rotating engineers through all the project stages, it said.

### Regulation of nanotechnology

Nano-versions of existing chemicals should be assessed as new chemicals, a NSW parliamentary committee has recommended.

The Standing Committee on State Development released its Nanotechnology in New South Wales report in October.

The committee heard that nanomaterials should be regulated by the federal government rather than the states. It recommended a national mandatory reporting scheme for companies that make, use or transport nanomaterials. "In the absence of a national scheme, NSW should proceed with investigating the development of its own mandatory reporting scheme," the report said.

The committee rejected calls for a

moratorium on nanomaterials, but acknowledged that certain materials may pose risks. It also recommended labelling of food, sunscreens and cosmetics that contain nanomaterials.

It noted that it would take several years to learn enough about nanotechnology to assess and manage its risks. It recommended the state government set up the NSW Nanotechnology Unit to coordinate the work of other agencies.

In addition, "the Nanotechnology Unit should be responsible for establishing and maintaining a public website on nanotechnology to provide updated whole of government information and advice," the report said.



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 phone 03 9642 4494 fax 03 9642 4495  
 jalthorp@icheme.org



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College contact

**Bill Chaffey**

11 National Circuit, Barton ACT 2600  
 phone 02 6270 6558 email bchaffey@engineersaustralia.org.au

# CHEMICAL ENGINEERING

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## NEWS

### Sydney Uni awards its chemical engineers

Chemical engineers were honoured at a University of Sydney award ceremony last month. The prize-giving was part of the Research Conversazione showcase of engineering and IT students' projects.

Chemical engineer David Hind received the Engineering Sydney Alumni of the Year Award. He is a former managing director of Process Gas Solutions, South Pacific for the BOC Group.


Hind currently chairs the Business Higher Education Round Table and Skills Tasmania. *Engineers Australia* magazine named him one of the country's most influential engineers in 2004 and 2005.

Second-year chemical engineering PhD student Andrew Gadd received the Sydnovate Excellence in Innovation award.



President of the University of Sydney Engineering Alumni Association John Doherty (l) presents the Alumni of the Year award to David Hind.

PHOTO: KIRILL REZTSOV



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**TRAINING COURSES**

<b>Control Operation &amp; Design of Reciprocating Gas Compressors</b>	16th - 17th February 2009	Perth
<b>Control &amp; Operation of Centrifugal Gas Compressors</b>	18th - 20th February 2009	Perth
<b>Subsea Systems</b>	23rd - 24th March 2009	Perth

For more information contact:  
Daren Reid, ESD Simulation Training Pty Ltd  
Tel: (08) 9355 5599  
Email: [daren.reid@esd-simulation.com](mailto:daren.reid@esd-simulation.com)



His research focuses on using electrocoagulation to treat wastewater generated by the fermentation of cane molasses in biofuel, food and beverage industries. The wastewater is full of colloidal organics, such as melanoidins, lignins, waxes and caramels. According to Gadd, conventional treatment methods such as biological digestion cannot remove these pollutants.

Electrocoagulation relies on an electrode placed in the water. An electric current passes through the electrode to corrode it.

The corrosion "destabilises" the pollutants, Gadd said.

His results show that electrocoagulation can remove up to 70% of the total organic carbon in the molasses wastewater.

Gadd and his fellow researchers are currently working on designs for a pilot reactor.

The project, funded by the Australian Research Council, is being carried out in a partnership with yeast manufacturer AB Mauri.



Andrew Gadd holds his Sydnovate Excellence in Innovation award.

PHOTO: KIRILL REZTSOV

# CHEMICAL ENGINEERING

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# ICHEME

## New award in honour of “legendary figure”

A new medal recognising outstanding contributions to chemical engineering will be presented for the first time next year, in tribute to IChemE in Australia's former chairman, the late Professor Don Nicklin.

The Nicklin Medal will be awarded to an individual for his/her exceptional practical contribution to chemical engineering, or the development of technology that contributes to delivering IChemE's international vision. The new honour was unveiled at the 2008 IChemE Innovation and Excellence Awards Dinner last month in Birmingham, UK, by current Australian chairman Russell Scott.

The announcement comes one year after Nicklin's death and Scott described the new initiative as an apt honour: “Don was a legendary figure in Australia, a man who was widely recognised for his outstanding achievement and innovation in chemical engineering and technology.

“We mourn his passing but we also celebrate his memory. The Nicklin Medal will

be our tribute to Don and a fitting way to preserve his memory,” Scott said.

Nicklin was the long-standing head of chemical engineering at Melbourne Uni-



Prof Don Nicklin

versity and a successful consultant with positions on several industrial institutes and research bodies.

He was chairman of the Board at Austa Energy Corporation, as well as the Centre for Mining Technology and Equipment. He held positions on the Board of the Sugar Research Institute and the Industry Research and Development Board. He also served on the Prime Minister's Science, Engineering and Innovation Council.

While on the Board of the Queensland Museum, Nicklin was instrumental in setting up the Queensland Sciencentre, and was chairman of its management committee.

Awarded the Chemeca Medal in 1987, Nicklin was a Fellow of IChemE, as well as the Australian Academy of Technological Sciences and Engineering.

For more information about the Nicklin Medal, contact Andrew Furlong at [afurlong@icheme.org](mailto:afurlong@icheme.org).

## More maintenance needed for process control

Australia's process industries should make the maintenance of control loops, especially basic PID controls, a higher priority to achieve world best practice levels in process control and reap the benefits that follow, according to Michael Brisk, emeritus professor in chemical engineering at Monash University.

Brisk made these remarks during his presentation of the review of the Australian Process Industries Process Control 2005 Survey during an IChemE *Process Management and Control Subject Group* online seminar (webinar) last month.

Brisk said the survey showed that Australia's minerals processing industries in particular are achieving significant economic benefits from the

application of process control, but that industry does not appear to be showing sufficient awareness of the need to ensure the continuing health of their installed control systems: “There may be a role (for the subject group) for increasing the knowledge and awareness of management and engineering support personnel alike to these issues.

“Appropriate process control health monitoring and early proactive corrective action should become the norm and a breakdown maintenance culture should not be tolerated,” he said.

The original benchmarking survey was conducted by the National Committee on Automation Control and Instrumentation of the Electrical College of Engineers Australia.

Chemical engineers from Australia, the UK and Malaysia registered for the webinar.

IChemE chief executive David Brown said the new webinar technology helps the Institution's subject groups become truly international: “It's not feasible for people to travel around the world for many of these events, nor is it ideal for subject group members to wait for news of the event to be published in its group newsletter.

“Webinars give us the opportunity to bring specialist communities together.”

For more information about the Process Management and Control Subject Group, visit [www.icheme.org/pmc](http://www.icheme.org/pmc) or contact Gemma Jones at [gjones@icheme.org](mailto:gjones@icheme.org).

## ICHEME

### Australians go to the ball

Several Australian chemical engineers from industry and academia recently attended ChemEng 08 in Birmingham, UK.

They were joined by over 1000 other chemical and process industry professionals for the three-day event, organised by IChemE.

They also participated in IChemE's 15th Annual Innovation and Excellence Awards Dinner. IChemE in Australia chairman Russell Scott expressed his delight on behalf of the other Australian delegates at the opportunity to attend the dinner.

"The linking of the Awards Dinner to ChemEng08 has given us the opportunity to deliver some real international engagement. We finally get to go to the ball and



Prof David Wood



Russell Scott

it's great to be here!"

The other delegates were Dr Don Hector (director of Grassick SSG Pty Ltd), Emeritus Professor David Wood (University of Melbourne), Dr Matt Hardin (School of Mechanical Engineering, University of Western Australia) and Dr Gordon Weiss (Product Manager, Energetics Pty Ltd). IChemE in Australia's membership marketing executive Tanya Graham also travelled to the UK for the show.

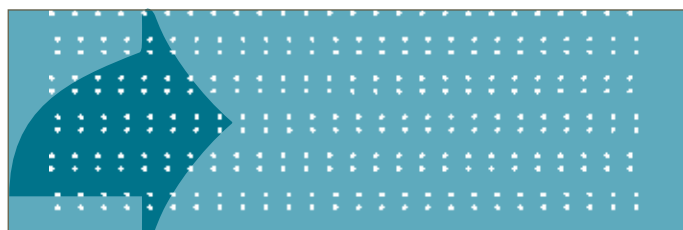
Australian involvement at ChemEng 08 included:

- Scott participated in a panel discussion, chaired by the economics editor of the UK's *Sunday Times* newspaper, David Smith, titled "Opportunities and challenges of emerging markets".
- Weiss presented "Perspectives on sustainability".
- Hardin delivered "The start of the road – the energy roadmap green paper".
- Hector presented "The start of the road: sustainable metropolitan water systems".

Australia also enjoyed some success in the IChemE Awards program, with University of Queensland and BP Refinery (Bulwer Island) Australia earning highly commended status in the Petronas Award for Excellence in Education & Training for their Novel Immersive 3D Environments.

### IChemE office closure

The IChemE in Australia office will be closed from Wednesday 24 December until Monday 5 January. We wish all our members a very enjoyable festive season and look forward to doing it all again in 2009. Best Wishes, Jan, Tanya, Victoria, Trish and Sally.



## Want to Get Chartered?

Attend one of our seminars to find out about the requirements, application and your individual route.

To book your place for an online or in-person session visit: [www.getchartered.org/workshops.htm](http://www.getchartered.org/workshops.htm)



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heart of the process



**CHEMECA  
2009**

**Engineering  
our Future:  
Are We Up to  
the Challenge?**

[www.chemeca2009.com](http://www.chemeca2009.com)

**27 - 30 September 2009**  
Burswood Entertainment Complex, Perth, Western Australia

## First Announcement & Call for Abstracts

### Invitation

On behalf of the Organising Committee, it is my pleasure to invite you to join us at Chemeca 2009 in Perth.

Our world is full of challenges and new challenges emerge every day. Some are potential threats to our continued existence. Some are amazing opportunities to improve our world and fulfil a profound purpose and some are small enough to affect local communities or individuals. In all cases, Engineers of all disciplines have the capability and the duty to contribute to sustainable solutions. Chemeca 2009 "Engineering our Future: Are We Up to the Challenge?" will provide an opportunity for presentations from both academia and industry, facilitating the meaningful exchange of innovative ideas amongst the chemical engineering community and inspiring all participants to contribute to the future.

What better place to be inspired than Perth? The capital of Western Australia is emerging as a vibrant and forward looking city. The resources boom has generated both opportunity and challenges and, without doubt, Perth is the place to be.

Join us for a program of presentations, conversations, debates and, above all, new inspiration.

Through your participation, let Chemeca 2009 be the catalyst that inspires us all to accept the challenge of "Engineering our Future".

**Thys Heyns**  
Conference Chair Chemeca 2009



### Organising Committee

Thys Heyns - Conference Chair  
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Peter Snowsill - Co-Deputy Chair  
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Moses Tade

### Important Dates

Abstract submission closed	Friday, 20 February 2009
Abstract notification to authors & request for papers	Friday, 20 March 2009
Paper submission deadline	Friday, 19 June 2009
Notification of review outcome & schedule notification	Friday, 3 July 2009
Early registration deadline	Friday, 31 July 2009
Accommodation deadline	Friday, 21 August 2009

### Conference Venue

#### Burswood Entertainment Complex

Nestled on the banks of the scenic Swan River in Perth, only 10 minutes from the domestic and international airports and a short 5 minutes from the CBD, Burswood is surrounded by 100 hectares of superbly landscaped gardens and parklands. Among the Complex's many world class luxuries is the 24-hour casino, 9 restaurants and 6 bars, the Burswood Theatre, the Burswood Dome and the world-class Burswood Park Public Golf Course.

#### Perth - Your Host City

Perth is Western Australia's vibrant riverside capital. A city with an easygoing lifestyle and friendliness second to none. Perth flanks the broad reaches of the Swan River and is bordered by the Indian Ocean to the west and the Darling Ranges to the east. A sophisticated yet casual city, there are museums, art galleries, parks, restaurants and a wealth of shops to explore. The city offers a diversity of hotels, motels, serviced apartments and self-catering accommodation, often at a cost structure which compares most favourably with other Australian cities.

Connecting flights throughout Australia are frequent with direct flights from many of the major regional western pacific cities on a daily basis. Regular scheduled air coach services provide the ideal source of transportation to discover this vast State.



### Who should attend?

The Conference will interest all those who contribute to the advancement of technology and the process industries, including scientists, engineers, manufacturers, suppliers and service professionals.

### Why attend?

Chemeca 2009 will not only be a showcase for new knowledge but also a forum to discuss the latest development in current issues. It is an excellent opportunity to share innovation. The industry and academia leaders will present their visions for the future of our profession, especially in the Australasian context. Chemeca 2009 also provides the opportunity for the technology and service providers to promote their products and services to a learned audience. The diverse range of delegates and papers and presentations can inspire synergies and collaborations between academia and industry.





# CHEMECA 2009

Engineering  
our Future:  
Are We Up to  
the Challenge?

[www.chemeca2009.com](http://www.chemeca2009.com)

27 - 30 September 2009  
Burswood Entertainment Complex, Perth, Western Australia

## Call for Abstracts

Abstracts are now invited for paper and poster presentations. If you wish to submit an abstract for consideration by the Technical Program Committee you must also intend to submit a full paper for peer review (extended abstract sufficient for poster presentation) and to register for the Conference. On-line submission is the only method of receipt of abstracts. Abstracts should be a maximum of 250 words. For more information regarding the length and format of abstracts visit [www.chemeca2009.com](http://www.chemeca2009.com), if you have questions regarding the on-line submission procedure, please email your query to [program@icms.com.au](mailto:program@icms.com.au)

If you wish to present a paper or poster, please submit your abstract on-line at [www.chemeca2009.com](http://www.chemeca2009.com) no later than Friday, 20 February 2009.

## Confirmation of Receipt of Abstract

Immediately following submission via [www.chemeca2009.com](http://www.chemeca2009.com) you will receive an electronic abstract receipt, including a submission reference number and confirmation of your personal password. These details should be used if you wish to edit your abstract up to and no later than the submission deadline **Friday, 20 February 2009**. No changes will be possible after this deadline. Submissions of abstracts will NOT be accepted after this date.

## Paper submissions

An invitation to submit a full paper will be issued once all abstracts have been reviewed. The deadline for receipt of full papers is **Friday, 19 June 2009**.

## Presentation Format

Papers may be accepted for oral or poster presentation. Industry participants have an option of preparing extended abstracts of a maximum of 3 page length once their abstracts are accepted. Such extended abstracts will be fast tracked for review. All other papers and those mainly from academic participants will be subject to full peer review by at least two anonymous reviewers. Peer reviewed papers will be accepted after the required revisions have been made and a rebuttal indicating the necessary changes made to the original version. High quality papers may be selected for publications as special issues in journals.

The Technical Program Committee reserves the right to decide the format of presentation on the basis of time and space available. Furthermore, the Technical Program Committee will like to stress that all poster papers and oral papers will enjoy the same status for this conference. Specifically, they will be fully peer reviewed as oral papers and they will be presented in an integrated model as one of the parallel sessions rather than being additive to the usual parallel sessions as for other conferences. Poster papers will be displayed on the days allotted to it and each presenter will have about 3 to 5 minutes (using 3 slides) to introduce their poster during the parallel sessions after which the delegates will formally view the posters, etc.

## Abstract Themes

Chemeca 2009 will showcase the latest knowledge in process engineering specifically covering the areas of:

- Bioprocessing and nanotechnology
- Environmental science and technology
- Fuels and energy
- Oil and gas
- Mineral processing and particle technology
- Modelling, simulations and control
- Industrial best practice and innovation
- Education, community and people

## Conference Office

ICMS Pty Ltd  
84 Queensbridge Street  
Southbank VIC 3006  
Australia  
E: [chemeca2009@icms.com.au](mailto:chemeca2009@icms.com.au)  
T: + 61 3 9682 0244  
F: + 61 3 9682 0288  
W: [www.chemeca2009.com](http://www.chemeca2009.com)



## Sponsorship & Exhibition

Organisations are invited to participate as Sponsors and Exhibitors during the Chemeca 2009 Conference. The exhibition area will be located centrally to the session rooms and delegates will have ample opportunity to view all of the exhibits. Delegate morning teas, lunches and afternoon teas will be served within this area. Please contact ICMS Pty Ltd, the Conference Office, for a detailed prospectus.



# CHEMICAL ENGINEERING

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## EVENTS

### AUSTRALIA

**Seminars:** **Pump fundamentals** (2 days) Perth 2 Dec, Adelaide 9 Dec, Darwin 15 Dec; **Liquid piping systems fundamentals** (2 days) Perth 4 Dec, Adelaide 11 Dec; **Advanced slurry pumping and pipelines** (2 days) Brisbane 2 Mar 2009, Perth 5 Mar 2009. *Inquiries:* Kasa Redberg 02 9868 1111, fax 02 8246 6387, email info@kasa.com.au, web www.kasa.com.au

**Conference:** **Radical polymerisation** (3 days) Melbourne 15 Feb 2009. *Inquiries:* Dr Graeme Moad, CSIRO Molecular Science 03 9545 2509, fax 03 9545 2446, email graeme.moad@csiro.au, web www.csiro.au/events/RAFT.html

**Seminars:** **Control operation and design of reciprocating gas compressors** (2 days) Perth 16 Feb 2009, Brisbane 15 Jun 2009; **Subsea systems** (2 days) Perth 23 Mar 2009, 22 Jun 2009; **Practical aspects of process control and instrumentation** (3 days) Perth 4 May; **Floating LNG – production storage offloading and regasification** (2 days) Perth 19 Oct 2009; **Production process and emergency systems on oil and gas installations** (3 days) Perth 9 Nov 2009; **Design & Operation of FPSOs** (3 days) Perth 16 Nov 2009. *Inquiries:* Darren Reid 08 9355 5599, email daren.reid@esd-simulation.com

**Conference:** **Australasian oil and gas exhibition and conference** (3 days) Perth 17 Feb, 2009. *Inquiries:* 03 9261 4500, fax 03 9261 4545, email aog@divexhibitions.com.au, web www.aogexpo.com.au

**Conference:** **Chemeca 2009** (4 days) Perth 27 Sep 2009. *Inquiries:* web www.chemeca2009.com

**Conference:** **12th IUPAC international congress of pesticide chemistry** (5 days) Melbourne 4 Jul, 2010. *Inquiries:* Royal Australian Chemical Institute 03 9328 2033, fax 03 9328 2670, email iupacipc2010@raci.org.au, web www.raci.org.au/iupacipc2010

### IChemE courses

Training pilots for the HAZOP Study for Team Leaders and Team Members have been planned for Perth on 9-11 December, Melbourne on 18-20 February 2009 and Brisbane on 23-25 February 2009.

Places on the courses are limited, so if you are interested in attending, please email austcourses@icheme.org or call 03 9642 4494.

A variety of training courses are being planned for 2009 in Australia, providing the chemical and process engineering community with further professional development opportunities.

The full training program for 2009 is in development. To receive the latest news and updates, email austcourses@icheme.org or call 03 9642 4494.

### Achema 2009

Non-fossil fuels will be the main focus of the Achema 2009 chemical engineering, biotechnology and environmental protection expo and congress in Frankfurt-am-Main, Germany.

The event, which takes place on 11-15 May, has the theme of "Chemistry and biotechnology for renewable resources and

### OVERSEAS

**Conference:** **10th Florida heterocyclic conference** (4 days) Gainesville, US 8 Mar 2009. *Inquiries:* Prof Alan Katritzky, +1 352 392 0554, fax +1 352 392 9199, email katritzky@chem.ufl.edu, web www.arkat-usa.org

**Conference:** **3rd international symposium on trace elements in food** (3 days) Rome 1 Apr 2009. *Inquiries:* Dr Francesco Cubadda, +39 06 4990 3643, fax +39 06 4990 2540, email francesco.cubadda@iss.it, web www.tef3-2009.it

**Conference:** **PolyChar 17 – world forum on advanced materials** (5 days) France 20 Apr 2009. *Inquiries:* Allison Saiter +33 2 32 95 50 86, fax +33 2 32 95 50 82, email allison.saiter@univ-rouen.fr, web www.polychar17.fr

**Conference:** **Achema 2009** (5 days) Frankfurt 11 May 2009. *Inquiries:* email achema@dechema.de, web www.achema.de

**Conference:** **2nd international conference on self-healing materials** (4 days) Chicago 29 Jun 2009. *Inquiries:* Dr Solar Olugebefola +1 217 333 2578, fax +1 217 244 0181, email solar@illinois.edu, web conferences.beckman.uiuc.edu/ICSHM2009

**Conference:** **XVII international conference on chemical thermodynamics in Russia** (5 days) Moscow 29 Jun 2009. *Inquiries:* Prof J D Tretjakov +7 8 495 939 2074, fax +7 8 495 939 0998, email rcct2009@kstu.ru, web rcct2009.kstu.ru

**Conference:** **International symposium on novel aromatic compounds** (6 days) Luxembourg 19 Jul 2009. *Inquiries:* Prof. Carlo Thilgen +41 1 632 2935, fax +41 1 632 1109, email thilgen@org.chem.ethz.ch, web www.isna13.lu

**Conference:** **19th international symposium on plasma chemistry** (6 days) Bochum 26 Jul 2009. *Inquiries:* Prof. Achim von Keudell +49 234 322 3680, fax +49 234 321 4171, email Achim.vonKeudell@rub.de, web www.ispc-conference.org

**Conference:** **8th world congress of chemical engineering** (5 days) Montreal 23 Aug 2009. *Inquiries:* www.wcce8.org

energy." It will demonstrate new developments in biorefineries, biofuels, bioplastics and photovoltaics.

Achema purports to be the world's biggest process industry expo. The organisers expect some 180,000 visitors, including 30,000 senior management executives. Engineers are expected to make up over a third of the attendees.

The congress will include a recruitment forum and a lecture program. The International User Association of Automation Technology in Process Industries will host a roundtable discussion.

Congress lecture topics will include:

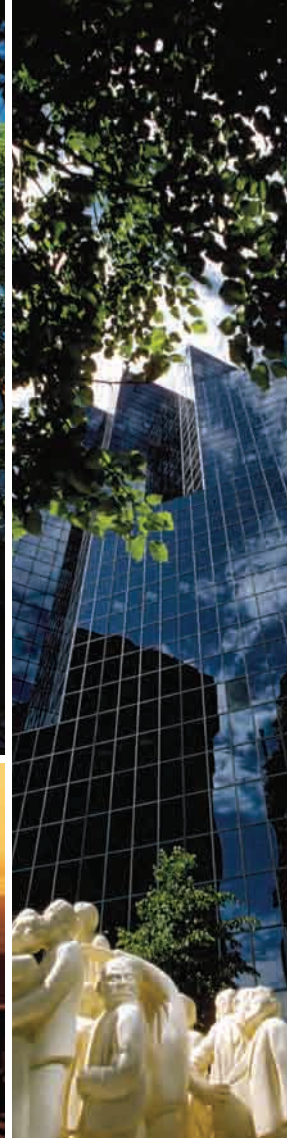
- new reaction pathways and advanced reaction technology
- processes and apparatus for pharmaceutical production
- fuel cell technologies
- gas separation by membranes
- industrial water technologies
- integrated energetic use of biomass, RDF and waste
- ionic liquids in process engineering
- microchemical engineering
- minimisation of CO<sub>2</sub> emissions
- nanotechnology/nanomaterials
- smart packaging

For more info visit [www.achema.de](http://www.achema.de).



**MONTREAL 2009**  
8TH WORLD CONGRESS OF CHEMICAL ENGINEERING

**CHALLENGES FOR A CHANGING WORLD**



**Organising Committee Executive**

- Prof. Philippe Tanguy, Congress Chair, École Polytechnique de Montréal
- Prof. Richard Munz, Congress Vice-Chair, McGill University
- Prof. Jamal Chaouki, Technical Program Director, École Polytechnique de Montréal
- Prof. Gregory S. Patience, Industrial Program Director, École Polytechnique de Montréal
- Roland Andersson, Executive Director, Canadian Society for Chemical Engineering
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**8TH WORLD CONGRESS OF CHEMICAL ENGINEERING**  
INCORPORATING THE 59TH CANADIAN CHEMICAL ENGINEERING CONFERENCE  
AND THE XXIV INTERAMERICAN CONGRESS OF CHEMICAL ENGINEERING  
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[www.wcce8.org](http://www.wcce8.org)



## NEW PRODUCTS

### Detecting liquid levels in refrigeration

The MP300 switch series is equipped with a floating actuator for liquid level detection in industrial refrigeration and other process control applications. The device can be wired as a changeover switch or send a signal as an input to the PLC.

The floating polypropylene ball has a 5cm diameter, and can work at temperatures of 99°C – withstanding up to 121°C for short periods of time. It is suitable for a wide variety of liquids, from oil to coolant.

The switch itself is rated to IP67.

The sizes and lengths of the floating ball and level actuator can be customised for specific applications.

[www.microprecision.us](http://www.microprecision.us)



*The MP300 switch can be used to detect liquid levels for process control.*

### Actuators for process control valves

Rotork has launched the CVA range of electric actuators for process control valves. Operating on an industry-standard 4-20mA control signal or digital bus, the actuators provide continuous, repeatable modulating control with a programmable fail-to-position option.

Available for the direct-drive actuation of linear or quarter-turn control valves, the range delivers a maximum thrust of 22.2kN with a maximum stroke of 114.3mm, while quarter-turn actuators supply a maximum

rated torque of 677.5Nm. Actuators can be specified for single-phase AC or DC electrical supplies.

The actuators are fitted with a “double-sealed” enclosure, which shields internal components from the operating atmosphere. The IP68 enclosure can be submersed at up to 7m for a maximum of 72h.

If mains power is lost, built-in supercapacitors allow the actuators to move the valve to a desired position. Manual operation is also available.

The actuators can be set-up and configured using Bluetooth.

Each one incorporates an onboard data logger, recording valve torque profiles, dwell times, actuator events and statistics to be downloaded for detailed investigation and diagnosis.

After analysis, any required configuration changes can be uploaded into to the actuator.

The CVA range is compatible Hart and Foundation Fieldbus protocols.

### Collecting data in hazardous areas



*The DX99 has been designed to collect data in hazardous areas.*

The DX99 battery-powered node has been designed to collect data in hazardous areas.

The transceiver is powered by a liquid lithium battery. It works best in applications that have low sensor power requirements, including thermocouple, digital, RTD and loop-powered sensors.

The DX99 uses sampling technology to reduce power consumption. According to the company, at certain settings, the device can operate up to 10 years on a single battery.

In addition to a radio system, the device can also power a certified Class I sensor.

The DX99 is equipped with a 2dBi antenna. Every device has a built-in site survey mode that allows the installer to determine the quality of the wireless link. It can be added quickly to an existing system, without the need for wires.

[www.micromax.com](http://www.micromax.com)

## NEW PRODUCTS



*The Liquicap T level measurement instrument is suitable for a variety of liquids.*

### Measuring liquids

The Liquicap T continuous level measuring instrumentation for liquids can function in build-up compensation mode that overcomes performance problems normally associated with conventional capacitance/inductance level measuring probes. It is suitable for chemically aggressive or sticky liquids.

This fit-and-forget level instrument automatically compensates for any coating or scaling, detecting build-up by measuring the changes in the electrical parameters. It is unaffected by changing density, temperature, dielectric constant, vapour and foam.

It can measure liquids in plastic ISO containers, GRP tanks or concrete pi. The device is supplied precalibrated. The standard 2m rod probe comes with a shortening kit so it can be adjusted on-site by the customer.

When combined with the Endress+Hauser Fieldgate remote location data transmitter, the Liquicap T can measure liquid levels at isolated sites.

Fieldgate software allows customers to view multiple container levels from their nearest workstation or through an online portal.

[www.au.endress.com](http://www.au.endress.com)

### Safety animations

IChemE and BP have published a series of animations designed to help engineers learn from past accidents.

The animations can be used as stand-alone training modules or as supplementary material for safety courses.

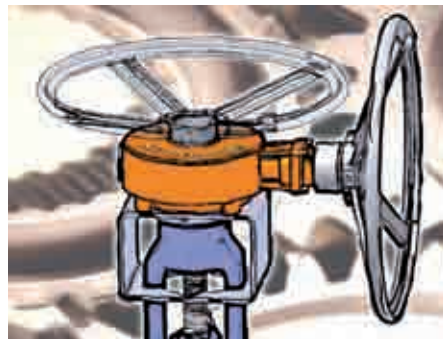
The first three animations focus on an LPG refinery fire in France, a refinery explosion in Wales and a North Sea oil production platform. Each animation follows the timeline of events from cause to effect.

With a focus on management system failures rather than technical details, the animations are designed challenge the viewer to consider their own safety methods and behaviour.

The animations are embedded in PowerPoint files and require FlashPlayer to run.

### Gears for valves

Dutch valve safety company Netherlocks has designed an add-on gearbox to reduce torque for handwheel-operated valves. The Nethergear unit fixes onto valves without modifying them in any way, and can be fitted without taking the valve offline.



*The Nethergear gearbox reduces torque for handwheel-operated valves.*

The adaptor is based on the company's interlock design that has been used as a safety system for over 15 years. Once attached, the handwheel can be fitted to the unit in one of two positions. One will reduce the torque and the other lets it function as it would have originally.

A pneumatic drive unit can also be attached for automatic valve operation.



*The Fabri-Valve SV1 has been designed for controlling heavy slurries.*

### Controlling slurries

The Fabri-Valve SV1 has been designed for controlling heavy slurries. Unlike traditional knife gate valves, the valve slices through a high-density slurry, preventing the seat from cutting and tearing, while also reducing the amount of discharge.

The angled-cut guillotine gate slices through media at an angle. Ultra-high molecular weight polyethylene gate support liners guide the gate through the entire stroke, shielding the body of the valve from direct contact with the media, while reducing downstream gate deflection and preventing the gate from cutting the seat.

The engineered polymer seats reduce friction. The material requires no lubrication, which could reduce maintenance costs.

The SV1 is designed for easy installation and maintenance. The gate can be completely removed and replaced while the valve is under pressure. Actuation can be changed in the field, and valves with self-supporting yokes providing valve orientation flexibility.

The valve is designed for positive bi-directional shutoff with zero downstream leakage. The shutoff performance is not affected by low pressure. Other standard features include dead-end service capability and mechanical lock-out in the open or closed position.

[www.itt.com](http://www.itt.com)