



## AUGUST 2007

Produced by Engineers Media, a company wholly owned by Engineers Australia, for the IChemE in Australia and the Chemical College of Engineers Australia. The statements made or opinions expressed in this magazine do not necessarily reflect the views of Engineers Australia or the Institution of Chemical Engineers in Australia.

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## NEWS

# Chemical engineer to lead university

The University of Queensland's senior deputy vice-chancellor Prof Paul Greenfield has been selected to take over the position of vice-chancellor from January 2008.

Chancellor Sir Llew Edwards made the announcement after Greenfield's unanimous selection by the UQ Senate, which followed an international search for the best candidate.

Announcing Greenfield's appointment, Edwards said: "Throughout his 32-year career at UQ he has made exemplary contributions to the university and to our local, national and international communities – including as chair of the International Expert Panel for the Queensland Water Commission and chair of the Scientific Expert Panel of the SEQ Healthy Waterways Partnership.



Prof Paul Greenfield

Greenfield will begin his 5-year term on 1 January, replacing Prof John Hay, who will retire on 31 December, after 12 years as vice-chancellor.

Greenfield came to UQ as a lecturer in chemical engineering in 1975. He became

senior deputy vice-chancellor in 2002. He has influenced public and private policy in areas including climate change, environmental management, wastewater management and biotechnology. In 2006 he became an Officer of the General Division of the Order of Australia for service to science, engineering and tertiary education.

He has been included in Engineers Australia magazine's list of Australia's 100 most influential engineers for the past four years.

He holds a bachelor of engineering with first class honours and a PhD from the University of New South Wales, and a bachelor of economics from UQ. He is credited with three patents, more than 180 journal publications, and more than 120 conference publications.

# Contract for copper project in Congo

Mining and minerals engineering service provider Ausenco has been appointed as preferred contractor to deliver the Kinsevere Stage II Copper Project.

Kinsevere, located 27km north of Lubumbashi, the provincial capital of the Katanga Province in the Democratic Republic of Congo, is majority owned and operated by the Australian-based mining company Anvil Mining.

The US\$238 million project, expected to be commissioned in mid 2009, will be delivered on an engineering, procurement and construction management (EPCM) reimbursable basis, with fee.

Managing director Zimi Meka said the region is one of the world's most exciting and prospective copper areas with up to US\$6 billion of new projects under consideration.

Ausenco is already working on the Lumwana Copper Project about 100km from Kinsevere.

The Kinsevere project extends the company's order book to US\$2.7 billion,

across a range of projects in Africa, Asia, the Americas, and Australia.

# Oil and gas contracts for Sakhalin

Production Services Network (PSN), a services contractor to oil, gas and water industries, has secured two oil & gas engineering contracts in Russia's Sakhalin Island, north of Japan.

The company said the contracts have created 100 new specialist engineering jobs. The new personnel will be based in Melbourne.

PSN will be recruiting specialist project engineers, mechanical and electrical engineers, quality and lead engineers, and senior procurement advisers.

Its work will include improving the performance of oil & gas facilities, both onshore and offshore; modifying

pipelines and structures; reducing risk and enhancing safety for production facilities; and making modifications to help reduce the environmental impact of oil & gas activities.

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### NEWS

## Australian winner of photo competition

Geoff Rigby from Newcastle has won the IChemE's international Jubilee photography competition. Entitled "Process perspectives", the competition was launched to inspire a fresh take on the modern world of chemical engineering and find new images to represent the diversity of the profession.

Rigby explained his image was taken on board a bulk carrier at sea during a chemical engineering study investigating the exchange of ballast water in ships as a means of minimising the risks of translocating harmful marine organisms around the world. "The results of this study are now incorporated into the International Maritime Organisation's guidelines for ballast exchange at sea used by thousands of ships each year."

The picture was a great example of using basic chemical engineering principles in a multidisciplinary approach to solve a major environmental problem, according to the competition judges. Rigby received a Nikon D50SLR camera.

There were also three category winners – Stuart Turner, Process; Paul Harvey, Product; Terence F Allen, People – who each received £25 of Amazon gift vouchers.

*Exchange of ballast water at sea to prevent the spread of harmful marine organisms.*



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## NEWS

### Green light for alumina refinery

Rio Tinto has approved a \$2.1 billion expansion of the Yarwun Alumina Refinery in Gladstone, Queensland, that will more than double annual production, increasing output by 2Mt/a to 3.4Mt/a by 2011.

Rio Tinto's long life resource at Weipa in northern Queensland will supply bauxite to the refinery.

The Yarwun expansion will have the benefit of substantial scale efficiencies gained from the construction of the first stage of the refinery.

Rio Tinto chief executive Tom Albanese said the expansion was due to "the attractive fundamentals of the aluminium industry, combined with Yarwun's well located, low-cost position and our excellent bauxite resource at Weipa."

Oscar Groeneveld, Rio Tinto Aluminium chief executive, said: "One important feature of the project is the inclusion of

a gas-fired cogeneration facility. Gas will become the refinery's primary fuel source, demonstrating our ongoing commitment to reducing greenhouse gas emissions and improving energy efficiency."

Origin Energy and Rio Tinto Aluminium have entered into a Gas Supply Agreement, which will see 470PJ of coal seam gas delivered to the Yarwun refinery. Origin Energy chief operating officer Karen Moses said gas supplies will commence between March and July 2010.

Moses said Origin will spend an estimated \$260 million to further develop its Walloon coal seam gas fields to supply this contract.

Work will commence on the alumina refinery expansion in the third quarter of 2007 and it is expected to take about three years to complete. First shipments are expected in the second half of 2010.

### New members needed

The NSW Joint Chemical Engineering Committee is seeking more members from Engineers Australia's College of Chemical Engineers and IChemE to join and take up the challenge of continuing to provide quality CPD experiences and opportunities for the membership of both organisations.

The duties of committee members include a meeting every second month for up to two hours to plan and organise its activities. Working on the committee counts towards CPD points.

Chairman Ian Ackland is retiring at the end of this year after more than 10 years service.

He can be contacted on 0414 183 368 or [ianackland@bigpond.com](mailto:ianackland@bigpond.com) for further information on the work of the committee.

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## NEWS

### Heat exchanger for viscous fluids

CSIRO has developed a new generation heat exchanger – RAMEX – which offers lower energy costs, a smaller industrial footprint, and more efficient heat transfer and mixing.

The RAMEX is based on the RAM (rotated arc mixer) mixer technology developed by CSIRO Manufacturing & Materials Technology fluid dynamics laboratories based in Melbourne.

Like RAM, RAMEX consists of two concentric cylinders. In the RAM the outer cylinder rotates, but in the RAMEX it is the inner cylinder which rotates which makes it easier to apply a heat-transfer surface to the outer wall.

In the RAMEX the inner cylinder has flow apertures at strategic locations. When one of the cylinders rotates, fluid moves axially through the inner cylinder, then radially through the apertures. The drag from the stationary cylinder sets up as secondary flow in the fluid.

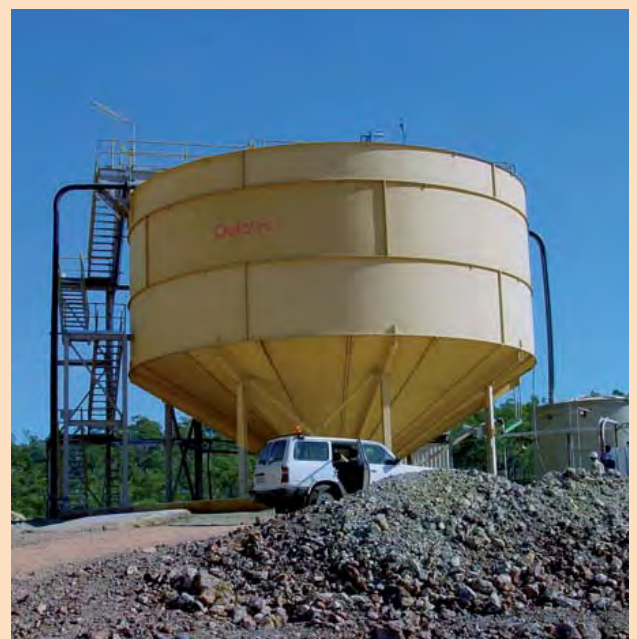
According to CSIRO the RAMEX offers a new method of mixing and heat exchange for highly viscous fluids without the need for the current methods of using stirrers, impellers and plates.

A RAMEX bioreactor can also be used for mixing viscous cell cultures with nutrients and oxygen.

The chaotic mixing produced in the RAMEX creates very fine-scale structure within a polymer melt, especially suitable for new applications such as electrically conducting polymers.

The developers of the RAMEX, Drs Guy Metcalfe and Murray Rudman said the original RAM mixer was initially developed mathematically. Development of RAMEX also relied on the use of advanced mathematics and simulation technology to fast track the development of an operational RAMEX. They said the RAMEX required more complex heat-transfer calculations than the RAM. RAMEX is also more complex to operate, requiring additional control parameters, they said.


The RAMEX is CSIRO patented technology and is now ready for commercial development.



### Thickeners for nickel project

A pair of Supaflo paste and high rate concentrate thickeners, similar to the one shown here, are being delivered by Outotec, formerly Outokumpu Technology, to Allegiance Mining's new \$77 million Avebury nickel project in Tasmania.

The 14m tailings paste and 8m concentrate high rate thickeners will each feature bolted tanks designed for rapid installation. Avebury is expected to produce 7500t/a to 8500t/a of nickel metal in concentrate.



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For more information contact:  
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Tel: (08) 9367 1844  
Email: [renaë.watson@esd-simulation.com](mailto:renaë.watson@esd-simulation.com)



[www.esd-simulation.com](http://www.esd-simulation.com)



## NEWS

### Savings from optimisation

Savings of about \$450,000/a have been experienced during the first 12 months of operation of ABB's Expert Optimiser at the Nargulu plant of titanium materials producer Iluka Resources Limited, in Western Australia, according to ABB Power.

Late last year, ABB completed the installation and commissioning of its Economic Process Optimisation (EPO) solution at the plant, which produces about 240,000t/a of two grades of synthetic rutile using the Becher process.

The EPO solution optimises both the control of the rotary kilns and the scheduling and operation of the batch/continuous wet process. For the wet process the ABB Model Predictive Control (MPC) and Mixed Logical Dynamical (MLD) model tools were installed. The EPO provides MPC, fuzzy



*The optimisation resulted in more stable operation of the kiln process at Iluka's Nargulu plant.*

logic and neural nets in one integrated platform.

ABB said the EPO has resulted in more stable operation of the kiln process. The standard deviation of the temperature was reduced by more than 50% and there was also a reduction in the number of pressure spikes in the system.

The latter is important because too many pressure spikes can lead to environmental violations.

More stable operation of the wet process has led to reduced gas consumption in the driers, decreased acid consumption in the leach system and reduced power consumption in the aerators.

# CHEMECA

2007

Academia and Industry Strengthening the Profession

Sofitel Melbourne, Victoria, Australia 23-26 September 2007

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The value of knowledge lies in its power to generate social benefit. Our success in this endeavour is dependent on industry's ability to apply that knowledge to fulfil the community's needs. Academia, in turn, has the responsibility to generate new knowledge to address the current deficiency. Together, academia and industry promote growth and advancement ... and hence, strengthen our profession.

## Registration online

Registration can now be done online. Go to [www.chemeca2007.com](http://www.chemeca2007.com) and then to Registration.

## Sponsorship and Exhibition Opportunities

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## NEWS

# Review of graduate education

by Matt Hardin

If there is one thing that most chemical engineers have firm opinions on, it is the quality of graduates and their education. Graduates, their immediate supervisors, senior managers and academics all hold strong views on these issues but discussions between them often yield more heat than light. While all agree that "quality" graduates are needed, there are often differences in opinion in what constitutes "quality" and whose responsibility it is to achieve it.

What does industry want from graduates? What skills can universities give graduates? What skills do graduates feel they need to succeed in the first five years of their careers? Are the graduate skills demanded by senior managers the same as the skills demanded by their immediate supervisors?

The IChemE Chemical Engineering Education Subject Group has organised a forum in December aimed at unravel-

ling some of these issues. This forum will address:

- emerging courses in chemical engineering education (eg product design)
- engineering science (eg maths, physics, chemistry, biochemistry)
- engineering fundamentals (eg thermodynamics, mass and heat transfer, fluid and solid mechanics, reaction engineering, unit operations)
- design (eg process design, sustainability,

equipment design)

- advanced engineering topics (eg polymer technology, bioprocess, advanced particle technology, tissue engineering)
- nontechnical engineering skills (eg communications, economics, management, project management).

The forum will examine how relevant this knowledge is to graduates, how well graduates know this material and what contributions both universities and industry make to training.

The forum will be opened by Prof Ian Cameron, who is currently a Carrick Fellow researching the alignment between engineering science and practice and how that relates to engineering education.

To ensure that all participants are talking about the same things, the Subject Group is surveying academics, graduates, their immediate supervisors and other interested stakeholders. The results of this survey

will be used as background for the participants of the forum as well as a guide to allow the workshops to focus on what is most important. The online survey can be accessed at [www.icheme.org/EducationForumSurvey.pdf](http://www.icheme.org/EducationForumSurvey.pdf).

This is the beginning of the conversation and it is not imagined that definitive answers will come out of the one-day forum. It is hoped, however, that the forum will inform curriculum development in Australian universities as well as informing industry as to the possibilities and limitations of undergraduate education. Outcomes of the survey and forum will be made widely available and further discussion will no doubt arise.

*Dr Matt Hardin is a member of the IChemE Chemical Engineering Education Subject Group.*

## Event Details

**When:** Saturday 1 December.

**Time:** 9am– 4pm.

**Where:** University of Queensland, St Lucia, Brisbane.

**Cost:** TBA will include lunch morning tea and afternoon tea.

**Contact:** Matt Hardin ([matth@cheque.uq.edu.au](mailto:matth@cheque.uq.edu.au)).

## Want to become a Chartered Engineer (CEng)?

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## OBITUARIES

# Expert in powerstation fuels and orienteering

by Howard Mitchell, David Brockway and Brenda Wardlaw

Dr Peter John Jackson was held in the highest regard by a wide group of engineers

and scientists in the Australian research community, particularly those involved

with natural gas, brown coal and power generation.

After graduating from Monash University with a Bachelor of Engineering (Hons) in 1971 and a PhD in 1977, Jackson joined ICI Australia for several years, before joining BHP's Melbourne Research Laboratories, where he remained until 1994. This period culminated in leadership of a large research team involved in conversion of natural gas to liquid fuels. In 1994, he was seconded to BHP Corporate Planning exploring new business opportunities for the company, specifically in technology evaluation and supervision of trials.

He joined the predecessor of the CRC for Clean Power from Lignite in 1995 as manager research and shortly afterwards became deputy CEO.

He worked closely with the CRC's PhD students and postdoctoral researchers. In any year he would oversee 40 to 50 diverse projects at seven research laboratories in Victoria and South Australia, involving close relationships with three universities and CSIRO.

His style was always inclusive and cooperative. He encouraged initiative and welcomed the intellectual inputs and initiatives of his researchers. These students and researchers drew strength from his management style, welcomed his leadership and saw him as a mentor and confidante.

Jackson was appointed CEO in early 2004, a position he held until the CRC wound up in 2006. He drove the last stages of the establishment of MTE Research Pty Ltd, the company constructing the \$6 million experimental MTE brown coal dewatering pilot plant in the Latrobe Valley.

He played a key role in spinning off a CRC technology which was commercialised by Laser Plasma Technologies Pty Ltd. As a director of the company, he contributed strongly to the commercialisation of the laser plasma spectrometer instrument,



## IChemE in Australia Board hosts a members forum – Chemeca 2007

IChemE Technical Roadmap for 21st Century Chemical Engineering

The next steps:  
Focus on Water & Energy

**This is an invitation to you: get involved and have your say, we need your input...**

Date: Sunday 23rd September 2007

Time: 2 – 5pm, (prior to the Chemeca Welcome Function)

Location: Sofitel Hotel, Melbourne

Who: All members of IChemE

Registration: There is no cost, but members need to register to attend

### Register

Send a completed registration form to [jalthorp@icHEME.org](mailto:jalthorp@icHEME.org) by 7th September 2007

Tel: +61 (0)3 96424494

Fax: +61 (0)3 96424495

### The challenge

Seeking your input in these 2 key areas

– Water

– Energy

– Where does the profession stand on many of the key issues currently preoccupying decision makers, opinion formers and the public at large.

– What are the key strategies in each of these areas?

– What chemical science based solutions are possible?

– What action should the profession promote in order to secure progress towards these solutions?

## OBITUARIES

now merged into the recently floated XRF Scientific Limited.

He also made a significant contribution to the Victorian government's Brown Coal R&D Advisory Group. It caused him some anguish that the accumulated experience of 13 years of the CRC was not utilised to form the basis of an ongoing organisation to ensure the continued exploitation of the state's brown coal resource on a sustainable basis.

Following the winding up of the CRC, his value to the research community was evidenced by the number of senior job offers he received.

He chose to take up a key role with CSIRO, and earlier this year he was the principal contributor to a comprehensive

submission to a Victorian government review related to future uses of brown coal in the Latrobe Valley.

CSIRO had intended that he would lead a major new pilot plant program at Loy Yang Power, but the scourge of terminal illness cut this short.

Peter Jackson was born on 27 October 1950 in Ballarat, the first child of Eileen and Harry Jackson. He matriculated as dux of Ashwood High School in Melbourne, just after his 17th birthday.

Orienteering was his sporting passion and it was through this sport that he met his wife, Carolyn Hooper, an elite orienteer. His involvement in orienteering included mapping, course setting, and serving on various committees including a term as

the Victorian association president. His technical expertise in mapping was widely regarded, and his most recent role of state map registrar was a labour of love. His proudest moment was when he won the Australian Championships in M35 in WA, an area which suited his incredible technical ability.

His battle with melanoma ended on 11 July when he passed away peacefully with his family by his side.

He is survived by his wife Carolyn, his children Adrian, Melinda and Timothy, and his mother Eileen.

*Howard Mitchell and David Brockway were colleagues and friends, Brenda Wardlaw is Peter Jackson's sister.*

## Outstanding engineer advanced the profession

by Bill Anderson

Professor Henry Reginald Clive Pratt will be fondly remembered by his colleagues and students as an outstanding chemical engineer who contributed much to the advancement of the profession in Australia.

He and his family arrived in Melbourne early 1958 when he took up his appointment as senior principal research scientist and head of the Chemical Engineering Section of CSIRO at Fishermen's Bend. For the next 15 years he built up the section which in 1962 became a division of which he became the chief.

The division had many scientific achievements across industry and in fundamental

research. When it outgrew the Fishermen's Bend site, it moved to new facilities at Clayton adjacent to Monash University.

Much of the human side of Pratt's career at CSIRO can be found in the book *Engineering a legacy – Memories of the journey of CSIRO chemical engineering*, published by CSIRO Minerals.

Pratt's achievements were not just confined to CSIRO, or the Harwell Atomic Energy Research Establishment and industry in his earlier career in the UK.

On his arrival in Australia he was concerned about the status of chemical engineering and its place in the Austral-

ian engineering profession. He set about establishing a branch of the Institution of Chemical Engineers which later became IChemE in Australia.

In 1970 he was instrumental in setting up the first of the Chemeca annual conferences which continue to this day. He was also keen to contribute to chemical engineering education, making CSIRO staff available for lectures and himself lecturing in advanced separation processes based on his book *Countercurrent separation processes*.

In 1973 he took up an appointment as an Honorary Professorial Fellow at the University of Melbourne where he pursued his research interests in solvent extraction and other topics while supervising many post-graduates for their doctoral candidature.

The following years at the university were for him fulfilling and enjoyable, only to be sadly interrupted by the passing of his wife Phyllis in 1997. They had been together for 58 years and had raised two children, Robert and Margaret. He continued with his work at the university until he found his mobility too restricted and at the age of 91 decided it was time to retire.

Clive Pratt was a gentleman of the old school, generous to a fault with his intellect, his patience and his empathy.



*Prof Clive Pratt was awarded the IChemE in Australia's Jubilee Medal in 2001. He is shown here (l) receiving the medal from Dr Mark Toner during the 6th World Chemical Engineering Congress in Melbourne.*



### CONFERENCES SEMINARS EXHIBITIONS

#### AUSTRALIA

##### Chemical Engineering

**Seminar: Joint technical meeting of Engineers Australia chemical engineering branch, Sydney division and IChemE-NSW group – photovoltaics** (1 day) Sydney 23 Aug. Inquiries: Ian Ackland 0414 183 368, email [ianackland@bigpond.com](mailto:ianackland@bigpond.com)

**Conference: Chemeca 2007** (4 days) Melbourne 23 Sep. Inquiries: ICMS 03 9682 0244, fax 03 9682 0288, email [chemeca2007@icms.com.au](mailto:chemeca2007@icms.com.au), web [www.chemeca2007.com](http://www.chemeca2007.com)

**Courses: Pump fundamentals** (2 days) Brisbane 16 Oct, Melbourne 23 Oct, Adelaide 29 Oct; **Liquid piping fundamentals** (2 days) Brisbane 18 Oct, Melbourne 25 Oct, Perth 1 Nov. Inquiries: 02 9868 1111, fax 02 8246 6387, email [info@kasa.com.au](mailto:info@kasa.com.au), web [www.kasa.com.au](http://www.kasa.com.au)

##### Energy

**Conference: 7th annual Energy Users Association of Australia conference** (2 days) Gold Coast 17 Oct. Inquiries: Energy Users Association of Australia 03 9898 3900, fax 03 9898 7499, email [euaa@euaa.com.au](mailto:euaa@euaa.com.au), web [www.euaa.com.au](http://www.euaa.com.au)

**Conference: Energy 21C – the 9th energy transmission & distribution conference** (4 days) Sydney 11 Nov. Inquiries: email , web [www.e21c.com.au](http://www.e21c.com.au)

**Conference: 17th world hydrogen energy conference** (5 days) Brisbane 15 Jun, 2008. Inquiries: ICMS 07 3307 4000, fax 07 3844 0909, email [whec2008@icms.com.au](mailto:whec2008@icms.com.au), web [www.whec2008.com](http://www.whec2008.com)

##### Materials Handling

**Conference: Dust explosions 2007** (2 days) Sydney 27 Sep. Inquiries: 02 9080 4307, fax 02 9290 3844, email [registration@informa.com.au](mailto:registration@informa.com.au), web [www.informa.com.au/dustexplosions](http://www.informa.com.au/dustexplosions)

##### Minerals processing

**Courses: Production process and emergency systems on oil and gas installations** (3 days) Perth 8 Oct; **Control operation and design of reciprocating gas compressors** (2 days) Melbourne 12 Nov; **Control and operation of centrifugal gas compressors** (3 days) Melbourne 14 Nov; **Practica aspects of process control and instrumentation** (3 days) Perth 29 Oct. Inquiries: 08 9367 1844, fax 08 9367 3886, email [julie.scholey@esd-simulation.com](mailto:julie.scholey@esd-simulation.com), web [www.esd-simulation.com](http://www.esd-simulation.com)

**Conference: Discrete element methods 2007** (3 days) Brisbane 27 Aug.

Inquiries: email [amanda@min-eng.com](mailto:amanda@min-eng.com), web [www.min-eng.com/dem07/index.html](http://www.min-eng.com/dem07/index.html)

**Conference: Precious metals 07** (2 days) Brisbane 30 Aug. Inquiries: email [amanda@min-eng.com](mailto:amanda@min-eng.com), web [www.min-eng.com/preciousmetals07/index.html](http://www.min-eng.com/preciousmetals07/index.html)

**Conference: Automated mineralogy 07** (2 days) Brisbane 1 Sep. Inquiries: email [amanda@min-eng.com](mailto:amanda@min-eng.com), web [www.min-eng.com/automatedmineralogy07/index.html](http://www.min-eng.com/automatedmineralogy07/index.html)

**Exhibition: AIMEX: Asia Pacific's international mining exhibition** (4 days) Sydney 4 Sep. Inquiries: 02 9422 2500, fax 02 9422 2555, email [ask@reedexpo.com.au](mailto:ask@reedexpo.com.au), web [www.reedexpo.com.au](http://www.reedexpo.com.au)

#### OVERSEAS

##### Chemical Engineering

**Conference: 12th Asian chemical congress** (3 days) Kuala Lumpur, Malaysia 23 Aug. Inquiries: +603 7728 3272, fax +603 7728 9909, email [ikmmy@pc.jaring.my](mailto:ikmmy@pc.jaring.my), web [www.ikm.org.my/DecACC.htm](http://www.ikm.org.my/DecACC.htm)

**Conference: 18th international symposium on plasma chemistry** (6 days) Kyoto, Japan 26 Aug. Inquiries: Prof Kunihide Tachibana, Kyoto University +81 75 383 2288, fax +81 75 383 2290, email [ispc18@plasma.kuee.kyoto-u.ac.jp](mailto:ispc18@plasma.kuee.kyoto-u.ac.jp), web [plasma.kuee.kyoto-u.ac.jp/ispc18](http://plasma.kuee.kyoto-u.ac.jp/ispc18)

**Conference: 11th international conference on chemistry & the environment** (4 days) Torun, Poland 9 Sep. Inquiries: email , web [www.50zjazd.ptchem.pl/en/index.php](http://www.50zjazd.ptchem.pl/en/index.php)

**Conference: 3rd international conference on the chemistry & physics of the transactinide elements** (6 days) Davos, Switzerland 23 Sep. Inquiries: Paul Scherrer Institut +41 56310 2401, fax +41 56310 4435, email , web [tan07.web.psi.ch](http://tan07.web.psi.ch)

**Conference: International soft matter conference 2007** (5 days) Aachen, Germany 1 Oct. Inquiries: Forschungszentrum Jülich +49 2461 613008, fax +49 2461 618108, email [ismc@fz-juelich.de](mailto:ismc@fz-juelich.de), web [www.fz-juelich.de/iff/ismc2007](http://www.fz-juelich.de/iff/ismc2007)

**Conference: 9th international workshop on polymer reaction engineering** (3 days) Hamburg, Germany 8 Oct. Inquiries: Dechema e.V., web [events.dechema.de/events.html](http://events.dechema.de/events.html)

##### Minerals processing

**Conference: Offshore Europe 2007** (4 days) Aberdeen, UK 4 Sep. Inquiries: +44 20 7299 3300, web [www.offshore-europe.co.uk](http://www.offshore-europe.co.uk)

**Conference: Flotation 2007** (5 days) Cape Town, South Africa 5 Nov. Inquiries: email [amanda@min-eng.com](mailto:amanda@min-eng.com), web [www.min-eng.com/flotation07/index.html](http://www.min-eng.com/flotation07/index.html)

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#### Perry's Chemical Engineers' Handbook

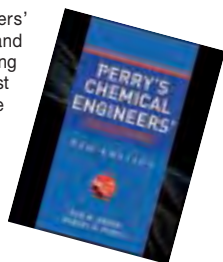
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## NEW PRODUCTS

### Solenoid valves for high temperatures

German valve manufacturer GSR Ventiltechnik, represented in Australia by Air & Hydraulic Systems, has released its Type 2/164 range of solenoid valves for high temperature applications. These are 2-way, 2-position force pilot operated piston type solenoid valves which have been



*The Type 2/164 range of Solenoid valves.*

developed primarily for blast furnace and boiler applications.

Incorporating a high temperature coil and a specially designed body with cooling fins, this range is suitable for use with pressures from 0 to 40 bar and temperatures up to 300°C.

The valves are available with threaded connections from G1/4" to G2" and flanges from DN15 and DN100.

Bodies are available in two grades of stainless steel (1.4581 and 1.4408) as well as cast steel (GS-C25). Seals are of PTFE and the seat is metal.

*More info? Qikreply 16*

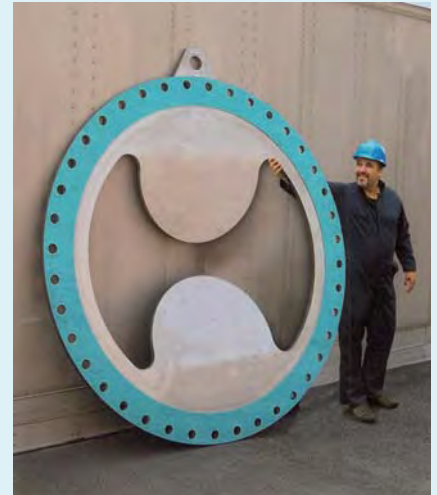
### Large fixed plate mixer

A fixed plate static injection mixer that can now be supplied in sizes up to 305cm in diameter for injecting any type of chemical into feed lines is being introduced by Westfall Manufacturing Co, of Bristol, Rhode Island, US.

Called the Westfall Model 2800 Static Mixer, it is a 316 stainless steel fixed plate with two Blue Gard 3000 gaskets and is designed to fit into the mating flange bolt circle of any piping system to provide rapid mixing of fluids.

The company said the mixer achieves more than 98% injected fluid dispersion only 10 diameters downstream.

It said the mixer can accommodate one or more fluids which are rapidly mixed by a combination of alternated vortex shedding and intense shear zone



*The Westfall static injection mixer.*

turbulence. Featuring beta ratios from 0.7 to 0.9, the mixer's opening can be specified to achieve the required head loss at the designed flow rate.

*More info? Qikreply 17*

### Temperature sensor

According to Moore Industries-International, its new Worm flexible temperature sensors are easier to install than straight sensors. With straight sensors, the company said, the connection head and thermowell assembly components must be removed to install the sensor. "The Worm bends around and through the top or face of an enclosure. It slides through the enclosure's entry port, and snaps into place without the need to remove the enclosure, rigid conduit, connection head or any assembly components," it said.

The company said the sensors can be installed in minutes, using a pair of pliers and wire cutters.

It said the sensors are immune to temperature effects, even in a short thermowell. They provide step response times 13% faster than standard, straight sensors, it said.

Worm sensors are available with a variety of RTDs and thermocouples, including 100 ohm and 1000 ohm, platinum, copper, nickel RTDs, and J- and K-type

thermocouples.

Worm temperature assemblies are also available for surface measurements. The sensors can be mounted directly to tanks, pipes, motors, compressors, and reactors. They can be supplied with a choice of PC-programmable or Smart Hart temperature transmitters.

*More info? Qikreply 18*

**For more information on any of these products, send an email to [kharrison@engineersmedia.com.au](mailto:kharrison@engineersmedia.com.au) with the subject headline "CEA Qikreply". Your contact details and the Qikreply number of the product should be included in the body of the email.**