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NEWS

Value adding on Burrup

Three projects on the Burrup Peninsula have moved closer to implementation. Indian-backed company Burrup Fertilisers has announced it will build a \$630 million ammonia plant, which will produce up to 2200t of liquid ammonia from natural gas each day over a minimum period of 25 years, generating annual export income of nearly \$200 million.

WA state development minister Clive

Brown recently met Burrup Fertilisers' parent company, the Oswal Group, in New Delhi to discuss the project and finalise outstanding issues.

"The project will trigger the construction of the state government's \$134 million multiuser infrastructure corridor on the peninsula," said WA premier Geoff Gallop. Plans for the corridor in the King Bay Hearson Cove industrial area were con-

solidated last September.

As part of the infrastructure package, the Water Corporation will develop a 280ML/d seawater supply and brine discharge system, for cooling processes for the ammonia plant and other projects in the precinct. Seawater will also be used as feed to a desalination plant.

Two other projects planned in the area have received environmental approval. One is a methanol plant proposed by GTL Resources (Liquigaz), which will produce 1Mt/a of methanol for export over a minimum life of 25 years.

To be built north of the King Bay Hearson Cove precinct, in the Withnell East industrial area, the plant will take 30 months to construct.

Methanol is a widely used industrial chemical and one of a number of potential cleaner fuels that can be substituted for petrol.

Liquigaz is 100% owned by GTL Resources, a company listed in the Alternative Investment Market of the London Stock Exchange.

Dampier Nitrogen also received environmental approval for its \$900 million ammonia-urea plant, which will produce around 1.2Mt of granular urea and 100,000t of ammonia each year.

Urea is used as a granular nitrogen fertiliser, while ammonia is a feedstock for nitrogen fertiliser and other petrochemical products.

Dampier Nitrogen project participants are Agrium Incorporated of Canada, Uhde of Germany, and Plenty River Corporation and Thiess.



Rake lift system and feedwell of an existing laterite counter-current decantation system.

Thickener for laterite nickel and cobalt

Outokumpu Technology has begun work on a contract for 10 high-rate thickeners for the Rio Tuba laterite nickel and cobalt mineral processing plant in the Philippines. The order is worth more than A\$4 million.

The project is a joint venture between the Coral Bay Nickel Corporation and the Sumitomo Metal Mining Co. It is scheduled to commence full operation in the second half of 2004.

It will produce 10,000t/a of nickel and 750t/a of cobalt, worth more than A\$100 million.

Included in the contract are a 20m thickener for ore preparation, seven 27m models for counter-current decantation (CCD), a 21m thickener for neutralisation and a 14m model for mixed sulfides. The contract includes supply of bridges and mechanisms including full surface treatment, as well as tank fabrication drawings.

Design and drafting work in Outokumpu's Perth and Sydney offices will be followed by fabrication work in the Philippines, scheduled to start in the next few months.

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NEWS

Award for paper on bubble load in industrial flotation

A young chemical engineer from Zimbabwe won the award for the best paper and presentation at the 11th Annual Julius Kruttschnitt Mineral Research Centre (JKMRC) Conference held in Brisbane last November.

Currently in his second year of a PhD at the University of Queensland centre, David Seaman won the award for his paper titled "Bubble load measurement in the pulp zone of industrial flotation machines", which describes his work on a bubble load measurement device.

His device directly measures the bubble loading of particle-bubble aggregates in industrial flotation machines. It cuts froth measurement time from several hours down to 15 minutes.

Seaman said the measurement of bubble load in industrial flotation machines allows for better analysis and hence operation of flotation circuits. The device is a possible tool to better control

flotation circuits.

He said it opens up many other research windows because of the ability to make a direct measurement of the pulp zone, which allows the researcher to infer what is happening in the froth phase.

"We are measuring exactly what is entering the froth phase, as opposed to measuring what is leaving to product," he said.

Seaman said the device was developed during fieldwork at Teck Cominco's Red Dog mine in northwest Alaska and had already proven itself in zinc cleaning and retreatment circuits.

"That's probably where you will get the most benefit because it helps to establish how to operate your cells and to improve the upgrading process in the froth. If you can improve your upgrading process you can improve your product and recover more out of the ore," he said.

Seaman believes there is potential to

use the device for online control of flotation circuits, but at the moment he will continue to use it as a research tool to further understand what is being measured in the pulp zone of flotation machines.

As the winner of the JKMRC award, which carries a first prize of an international trip to a conference of the winner's choice, Seaman will present his research at Copper 2003 in Santiago, Chile, next November.



Anglo Coal Australia chief mining engineer Bruce Robertson (left) presents PhD researcher David Seaman with the JKMRC shield for the best paper and presentation at the 11th JKMRC conference held in Brisbane recently.



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NEWS



Prof Jannie van Deventer (l) has succeeded Prof. David Wood as dean of engineering at Melbourne University. Both are chemical engineers.

New dean at Melbourne University

Professor Jannie van Deventer, an internationally-renowned expert in mineral processing and geopolymers, is the new dean of the University of Melbourne's Faculty of Engineering for five years.

He took over the position on 1 January from professor David Wood who retired after six years as dean of engineering.

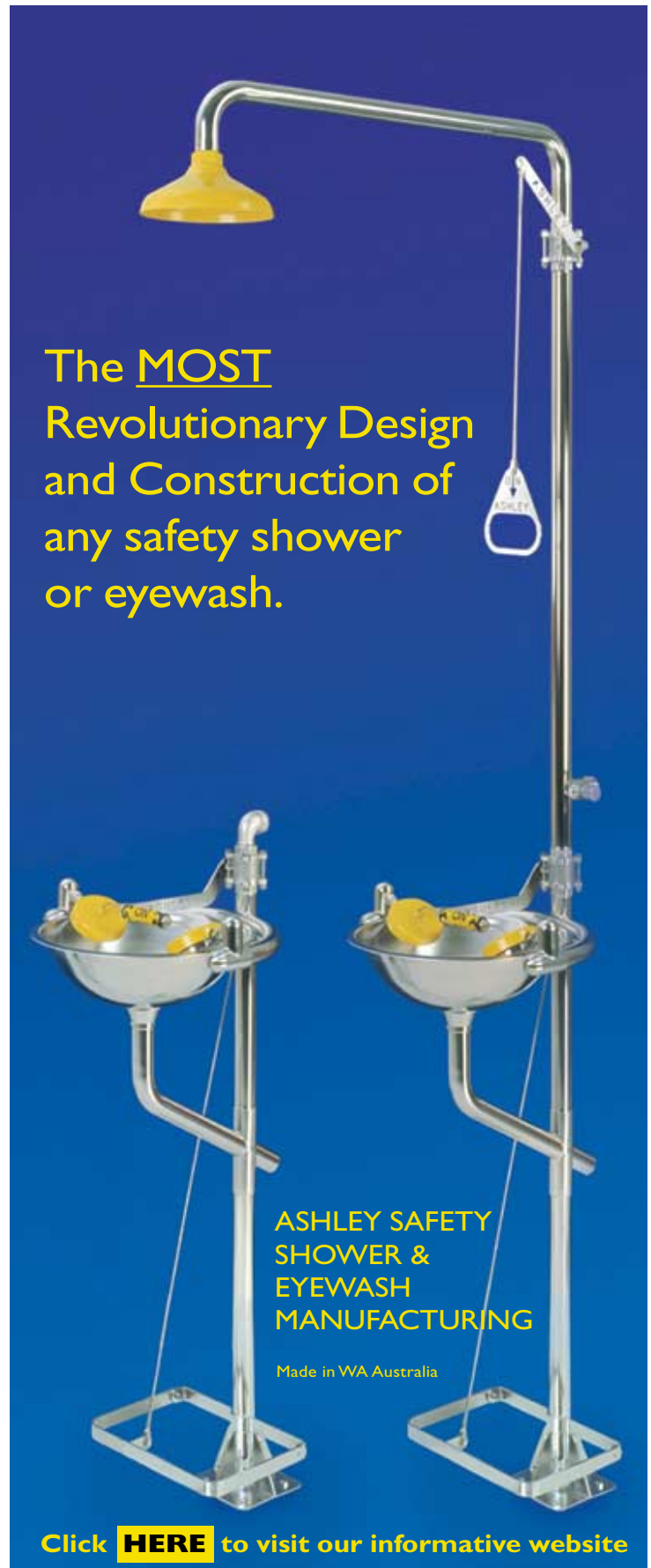
After emigrating from South Africa in 1995, van Deventer became foundation professor of mineral and process engineering at the University of Melbourne where he supervises a large research group on geopolymers and mineral processing in the Department of Chemical and Biomolecular Engineering. Since 1996 he has attracted more than \$2.5 million in federal government and industry research funding.

Van Deventer has three doctorates – in engineering and commerce – and he has had extensive experience commercialising technology. Currently he is collaborating with a number of international companies to develop a geopolymer-based industry, and as a member of the ARC Special Research Centre for Particulate Fluids Processing he collaborates with numerous researchers around the world.

His research focuses on the conversion of industrial waste, such as flyash, slag and clay, into geopolymers, which are environmentally friendly cement-like alumino-silicate materials that offer special properties like high durability, fireproofing and acid resistance.

"Geopolymers are already used by one of my research associates in Europe to fire-proof large passenger ships," he explained. "They have wide-ranging applications in the advanced materials and construction industries, and in the immobilisation of toxic and radioactive waste."

Van Deventer's research also includes environmentally friendly methods of enhanced metal extraction, mineral waste reduction, and the simulation and control of processes using artificial intelligence.



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NEWS

Processing effluent for reuse

Innovative membrane technology has been used in the design of an efficient new effluent processing system for a hardboard manufacturing facility in Ipswich near Brisbane.

In pilot trials, the new system for Australian Hardboards Limited (AHL) reduced industrial water consumption by 65% and enabled the recycling of close to 100% of the process effluent, along with offering energy savings.

The system, jointly developed by AHL and consulting engineer Sinclair Knight Merz (SKM), is expected to be adaptable to other liquid-solid separation applications in the timber, pulp and paper, water and wastewater, mine tailings, minerals and other wet process industries.

AHL's Queensland manufacturing plant uses mixed eucalyptus species as the principal raw material in the wet-process manufacture of a hardboard product known as Masonite.

The plant produces around one 1ML/d of effluent consisting mainly of suspended fibre, and colloidal and dissolved organic and inorganic materials, which are generated during the pulping and digestion process.

AHL managing director Rex Hills said the thermo-mechanical pulping process used was largely unchanged from an original late-1950s design. Process water effluent had been treated and recycled using traditional methods of settling ponds and land irrigation.

SKM process engineer Lee Foster said a range of key technology choices was investigated for the upgrade.

These included standard cross-flow membranes, the vibrating shear enhancement process (VSEP) membrane system, a membrane bioreactor, evaporation and standard biological systems.

"Our feasibility work involved a



Lee Foster ... The VSEP membrane technology offered the lowest capital and operating costs of all the systems investigated.

literature study of relevant industry practice and an extensive economic analysis to compare each technology option, including the impact of any process modifications," Foster said.

"The economic analysis demonstrated that the VSEP membrane technology offered the lowest capital and operating costs of all the systems investigated, while producing the best results," she said.

The technology uses intense vibratory

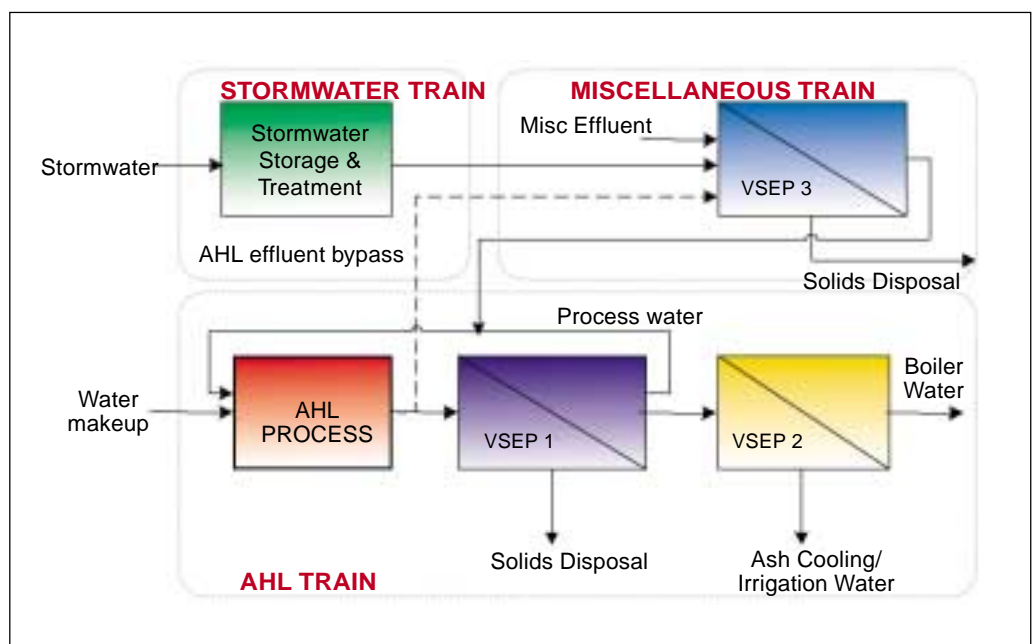
shear waves on the face of the membrane to stop the buildup of contaminants and to overcome the negative separation performance issues associated with conventional cross-flow membranes.

The vibration also improves fouling resistance and allows for filtration rates up to 10 times higher than is achievable with conventional cross-flow systems.

In addition, the cleaned permeate water was shown to be suitable for recycling back to the plant and, treated further with reverse osmosis, to be suitable for boiler use.

With the addition of the reverse osmosis treatment, the system would increase the boiler feed-water temperature from ambient to about 60°C, resulting in significant energy savings.

Foster has since resigned from SKM and is forming an independent consultancy that will continue with this work involving innovative process solutions, optimisation and simulation.



Flowchart of the pilot effluent processing system at Australian Hardboards Ltd in Ipswich, Queensland. In trials the system achieved the recycling of nearly 100% of the process effluent.



NEWS

Alliance

An alliance has been formed between the University of Sydney Chemical Engineering Department and Cetec Pty Ltd (Consulting Enterprises in Technology).

Cetec, a scientific risk assessment and management consultancy and laboratories, has established an office

within the Department to provide the maximum interaction between the skills of both organisations and joint usage of their extensive equipment.

Honours

Professor Tom Davis is among eight leading academics at the University of NSW

who have been honoured with the title of Scientia Professor. Davis is the director of research at the School of Chemical Engineering and Industrial Chemistry.

The University Council established the special category of Scientia Professor in 1997 to recognise academics who have achieved international eminence in research.

Scientia Professors receive a monetary award.

Davis' research focuses on polymers for biomedical and biotechnological uses.

Gas project in India

Clough Limited's Offshore Division has been awarded a contract in excess of A\$100 million for the Hazira Gas Project, located in the Bay of Cambay on the west coast of India for operator Niko Resources of Canada and Gujarat State Petroleum Corporation Ltd (GSPC).

Work on the project will commence immediately with completion and first production due early 2004. This is the fourth project to be undertaken by Clough in India.

The scope of the contract includes the engineering, procurement, construction, installation and commissioning of:

- a six-leg offshore drilling/wellhead platform in 18m water depth
- 4.5km of 12" subsea pipeline inclusive of tie-ins and some modifications to the onshore gas plant.

Niko Resources Ltd of Calgary is an oil and gas exploration and production company with operations in India and Bangladesh. India is a major focus for the group, with its Indian headquarters in Baroda, Gujarat.

GSPC is the local state oil and gas company headquartered in Ahmedabad.

Opportunities for Industrial Uses of Rendered Products

Research organisations and institutions from Australia and New Zealand are invited to submit proposals to identify opportunities for new and novel industrial uses of rendered products from the meat industry.

Meat & Livestock Australia (MLA) is a member of the Fats & Proteins Research Foundation research committee and is charged with the responsibility to solicit new research proposals for funding consideration. MLA is searching for research proposals that address biosecurity, new use applications, and in particular industrial use applications for rendered animal protein and fat products.

The Terms of Reference and the Non-Food/Feed Uses of Rendering Products September 15, 2002 Progress Report can be found on www.mla.com.au or by contacting MLA. Guidelines and templates for submission of proposals to the FPRF can be obtained from www.fprf.org.

Respondents to the Terms of Reference will also be invited participants to a technical workshop that will be jointly facilitated by MLA and FPRF in early July 2003.

Applications should be received by 28 February 2003 and addressed to:

Stephen De Martin
Client & Innovation Services
Meat & Livestock Australia
Locked Bag 991
North Sydney NSW 2059
Email: sdemartin@mla.com.au
Phone: 61 2 9463 9212





ICHEME/IEAUST NEWS

Want to become a course assessor?

Through its program of university course accreditation, IChemE aims to recognise and share best practice in the tertiary education of chemical engineers. At the same time it seeks to promote development of the profession by encouraging innovation in course design and delivery.

Accreditation of courses in Australia is carried out by a team of assessors from universities and industry throughout Australia. To ensure the panel of assessors is thoroughly prepared to conduct accreditation visits IChemE in Australia is organising a workshop for member volunteer training.

The workshop is planned for Tuesday 15 April in Sydney and is to be facilitated by Prof Richard Darton, IChemE vice-president, qualifications.

The workshop provides the opportunity

for corporate members of IChemE to train as members of the IChemE course accreditation teams and to familiarise themselves with the IChemE accreditation process. We are particularly seeking interest from industry based members who would

be able to be part of the assessor teams.

Trained assessors would be obliged to work as part of a three person volunteer assessor team later in 2003, during 2004 and beyond for visits within Australia and also internationally. Contact jan.althorp@icheme.org.au regarding your interest in becoming an IChemE assessor.

Going to Achema

The federal government is setting up a stand "Showcasing Australian Technology to the world" at Achema 2003, the 27th International Exhibition and Congress on Chemical Engineering, Environmental Protection & Biotechnology. Achema showcases scientific and technological innovations in chemical processing. It will be held in Frankfurt, Germany, on 19-24 May.

The federal government will be providing funding for the Australian pavilion.

Australian Technology Promotions (ATP) are seeking expressions of interest from Australian companies and research organisations.

For further information on how to participate in this event contact Ian Bergman, executive director ATP, by email ian.bergman@technologypromotions.com.au or phone 02 6230 1039. There is information on Achema 2003 on the front page of the ATP site www.technologypromotions.com.au

Industrial Hazards and Plant Safety

Sanjoy Banerjee
\$200 + GST = \$220

This book discusses the design, construction and operation of industrial plants to reduce the likelihood of hazardous incidents and recommends actions to mitigate their consequences should they occur. Coverage includes compressible multiphase flow, delegations and detonations, turbulent dispersion, and thermochemical characterisation methods for material decomposition and reactions.

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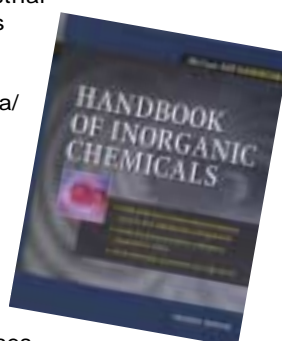


Handbook of Inorganic Chemicals

Pradyot Patnai
\$250 + GST = \$275

In convenient alphabetical order, each entry for more than 2000 of the most popular industrial chemicals lists synonyms, molecular weight, formula/structure and the type of compound based on functional group, CAS registry number, occurrence, uses and applications, physical properties, methods of preparation with chemical equations, chemical reactions, and health chemical analysis.

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Douglas Erwin
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CHEMECA LECTURE

Commercial development of the Jameson Flotation Cell

In 1986, Prof Graeme Jameson invented a new device for the separation of materials by flotation. The device was quickly taken up by an industrial company and is now used in many plants throughout the world. Jameson described the development and commercialisation of the new technology in his lecture as the 2002 winner of the Chemeca Medal in Christchurch, New Zealand, last October.

Flotation is a method for separating particles based on their wettability in water.

It is used for the recovery of valuable minerals such as sulfides of copper, nickel, zinc, and lead. It is also used for the recovery of fine coal particles from washery tailings.

My invention arose when I was doing research in a university vacation at Mount Isa Mines in Queensland. I saw tall flotation columns being built, up to 15m high, in which bubble-particle contacting would take place. I began to think about other ways of bringing particles and bubbles into collision. Building on 25 years of research into bubble generation and behaviour, I came up with a completely new concept which I trialled in my laboratory at Newcastle University. Mount Isa Mines became interested, did their own trials and, in 1989, entered into a licensing agreement with Tunra Limited, the university's technology transfer company, for metallurgical purposes.

The device is now in use in about 20 countries worldwide. The biggest application is in the Australian coal industry, where the installed capacity is 14Mt/a, contributing \$800 million a year to Australia's export income. The standard cell size is now 5m diameter, with some built up to 7m.

After its successful introduction in the coal and minerals industries, I developed techniques to apply the cell to the treatment of industrial wastewaters. A license was granted to a university spin-off company, Jetflote Pty Ltd, which I established for this purpose.

The cell was subsequently used for the treatment of many types of wastes, including dairy, rolling mill, and aluminium can manufacture.

There is today a vigorous industry associated with the commercialisation of intellectual property, and there is no shortage of people willing and able to get involved, all of them hoping for a share of



Prof Graeme Jameson ... I'd encourage anyone with the slightest urge to develop a new discovery or concept, to have a go, expecting failure but hopeful of success.

the action. But when the Jameson Cell was conceived, this industry was in an embryonic stage, and I was essentially required to pick things up as I went along. I drafted the original patent specification, a difficult job because the "inventive step" was not at all easy to define, and it took several years for the final version to emerge. I also did a lot of nuts-and-bolts work, such as mechanical design and drafting, sourcing of materials and equipment, arrangement of insurance and long-distance road haulage, commercial negotiation with suppliers and contractors, as well as licensing arrangements.

As an inventor in a university environment, I had little access to funds, but fortunately the capital required was quite small.

As for time, I had a certain discretion. After making sure my lecturing and administrative duties as head of department were attended to, I could find time for inventing, especially in the university vaca-

tions. In the mid-80s, universities were largely hostile to commercial development and offered no support at all. As a consequence however, the university took no interest and the inventor had great latitude in what he did, provided the rules were observed. I did not have to contend with committees, agendas, minutes or reports, which greatly helped to minimise the time to commercialisation. In the event, from conception of the idea in 1986 to the commissioning of the first full-scale plant at Newlands Coal in 1989 took a little over three years.

Inventing can be very rewarding. To make a lot of money, it is best to be in a field where there is plenty of blue sky. One needs a very large market for the new product, in an area with little history and few competitors. If your invention is an improvement, even a significant improvement, to a process or product already well entrenched, the financial returns will be more modest.

Inventing brings other rewards too. If you are focused on technical issues, it can be a great source of pleasure to know that you have made a significant advance in a particular process that has remained unchanged for many years. For a person like me, strongly focused on academic research, it is great to be able to point out that the country's balance of payment is benefiting to the tune of around a billion dollars a year, because of one's own efforts.

Finally, I think inventing involves a lot of fun in meeting challenges and overcoming them. Problem-solving is one of the key competencies of the chemical engineer, and the exercise of that art brings satisfactions of its own, especially when working with others of a like mind. Most inventions come to nothing, but I'd encourage anyone with the slightest urge to develop a new discovery or concept, to have a go, expecting failure but hopeful of success.

Professor Graeme Jameson is head of Newcastle University's Centre for Multiphase Processes.



CONFERENCES SEMINARS EXHIBITIONS

For a comprehensive list of upcoming engineering events, visit Engineers Australia's fully searchable continuously updated events database.

[CLICK HERE TO VISIT THE DATABASE](#)

Chemical Engineering

Conference: Chemeca 2003: The 31st Australasian chemical engineering conference Adelaide 28 Sept (4 days). *Inquiries:* Graham Teague, Hartley Management Solutions 08 8363 4399, fax 08 8363 4577, email chemeca2003@hartleymgt.com.au, web www.chemeca2003.adelaide.edu.au

Control

Exhibition: PACEX – the process and control exhibition Melbourne 20 May (4 days). *Inquiries:* George Martin, Reed Exhibitions Australia 02 9422 2511, fax 02 9422 2553, web www.nmw.reedexpo.com.au

Environment

Conference: Environmental Engineering Society national environmental conference – whose business is it anyway? Brisbane 18 June (3 days). *Inquiries:* Colleen Hanahan, Environmental Engineering Society – Queensland 07 3510 2114, email admin@eesq.com.au

Equipment

Conference & Exhibition: 7th international operating pressure equipment conference and exhibition Sydney 2 April (3 days). *Inquiries:* Institute of Materials Engineering Australia 03 9326 7266, fax 03 9326 7272, email events@mateng.asn.au, web www.mateng.asn.au

Materials Engineering

Workshop: 12th international workshop on sol-gel science and technology Sydney 24 Aug (6 days). *Inquiries:* John Bartlett, ANSTO 02 9717 3652, fax 02 9543 7179, email jxb@ansto.gov.au, web www.icms.com.au/sol-gel/

Conference: Corrosion control and NDT (incorporating Corrosion and prevention 03 and the biennial AINDT conference) Melbourne 23 Nov (4 days). *Inquiries:* Sally Nugent 03 9874 0800, fax 03 9874 4800, email aca@corrprev.org.au, web www.corrprev.org.au

Symposium: 26th Australasian polymer symposium Noosa 13 July (5

days). *Inquiries:* Andrew Whittaker, University of Queensland 07 3365 4100, fax 07 3365 3833, email 26aps@polymer.org.au, web www.polymer.org.au/26aps

Petrochemicals

Conference & Exhibition: 2003 conference and exhibition of the Australian Petroleum Production and Exploration Association Melbourne 23 March (4 days). *Inquiries:* Julie Hood 02 6267 0907, fax 02 6247 0548, email conference@aprc.com.au, web www.appea.com.au/whats_happening/2003CallforPapers.html

Course: Fundamentals of GTL technologies, markets and economics Perth 24 Feb (2 days) Melbourne 4 March (2 days). **Conference: The national coal seam methane and coal mine methane summit** Brisbane 26 March (3 days). *Inquiries:* Kathryn Granheim, IIR Resources 02 9923 5084, email kgranheim@iir.com.au

Exhibition: Australia's international oil and gas exhibition Sydney 9 Sept (5 days). *Inquiries:* George Martin, Reed Exhibitions 02 9422 4999, email george.martin@reedexpo.com.au, web www.aimex.reedexhibitions.com.au

Process Engineering

Courses: Control, operation and de-

sign of reciprocating gas compressors Perth 10 March (2 days) Brisbane 12 May (2 days); **Control, operation and design of screw compressors** Perth 4 April; **Control and operation of centrifugal gas compressors** Perth 12 March (3 days) Brisbane 14 May (3 days). *Inquiries:* Belinda Gault, ESD Simulations 08 9367 1844, email belinda@esd-simulation.com, web www.esd-simulation.com

Conference: 9th international conference on flow analysis Geelong 17 Feb (5 days). *Inquiries:* Simon Lewis, Deakin University 03 5227 2325, fax 03 5227 1040, email flow-analysis-9@deakin.edu.au, web www.deakin.edu.au/flowanalysis9/

Water

Conference & Exhibition: OzWater convention and exhibition: Innovations in water Perth 6 April (5 days). *Inquiries:* Quitz Event Management 02 9410 1302, fax 02 9410 0036, email quitz@bigpond.net.au, web www.awaozwater.net

Conference: Chemicals of concern in water Sydney 4 June (2 days). *Inquiries:* Australian Water Association 02 9413 1288, fax 02 9413 1047, email dwiesner@awa.asn.au, web www.awa.asn.au

OVERSEAS

Chemical Engineering

Conference: 5th international conference on boiling heat transfer Montego Bay, Jamaica 4 March (5 days). *Inquiries:* Jamie Richetelli +1 352 392 1701, fax +1 352 392 5437, email jrichet@doce.ufl.edu, web www.doce-conferences.ufl.edu/icbht/call.asp

Conference: ACHEMA: International meeting on chemical engineering, environmental protection and biotechnology Frankfurt, Germany 19 May (6 days). *Inquiries:* Messe Frankfurt GmbH +49 69 75750, fax +49 69 7575 6788, email info@messefrankfurt.com, web www.messefrankfurt.com

Conference: 4th international confer-

ence on frontiers in global optimisation Santorini, Greece 8 June (5 days). *Inquiries:* Aegean Conferences +1 610 527 7630, fax +1 610 527 7631, email abstracts@aegeanconferences.org, web www.aegeanconferences.org

Control

Conference: Advances in process analytics and control technologies York, UK 28 April (3 days). *Inquiries:* Natalie Driscoll +44 141 548 4836, fax +44 141 548 4713, email natalie@cpact.com

Engineering – Other

Exhibition: Hannover Messe 2003: Milestones in innovation Hannover, Germany 7 April (6 days). *Inquiries:* Cristina Hincapie, Hannover Fairs Australia Pty Ltd fax 02 9280 1977, email cristina.hincapie@hannoverfairs.

com.au, web www.hannoverfairs.com.au

Exhibitions: Test 2003 & Sensor 2003 Nurnberg, Germany 13 May (3 days). *Inquiries:* +49 50 339 6390, fax +49 50 331 056, email info@sensorfairs.de, web www.sensorfairs.com

Equipment

Exhibition: 2nd international fluid machinery exhibition Beijing, China 25 June (4 days). *Inquiries:* Business and Industrial Trade Fairs +852 2865 2633, fax +852 2866 1770, email enquiry@bif.com.hk

Mineral Processing

Conferences: Processing of complex and refractory ores Falmouth, UK 16 June (2 days); **Processing and disposal of minerals industry wastes** Falmouth, UK 18 June (3 days); **Symposium: 1st international**

symposium on hydrocyclones Cape Town, South Africa 24 Sept (3 days). *Inquiries:* email bwills@min-eng.com, web www.min-eng.com

Petrochemicals

Exhibition: IFB Berlin: International gas industry exhibition Berlin, Germany 7 April (5 days). *Inquiries:* Messe Berlin GmbH +49 30 30380, fax +49 30 3038 2325, email central@messe-berlin.de, web www.messe-berlin.de

Process Engineering

Exhibition: International exhibition for industrial furnaces and thermic production processes Dusseldorf, Germany 16 June (6 days). *Inquiries:* Messe Dusseldorf GmbH +49 211 4560 01, fax +49 211 4560 668, email info@messe-dusseldorf.de, web www.messe-dusseldorf.de



NEW PRODUCTS

Training packages for process industries

Manufacturing Learning Australia (MLA) – the national industry training advisory body covering the process manufacturing industries – has developed four training packages for those industries. They cover:

- chemical, hydrocarbons and oil refining (code PMA03) – qualifications from certificate 1 to advanced diploma
- plastics, rubber and cabling (code PMB01) – qualifications from certificate 1 to advanced diploma
- manufactured mineral products (code PMC99) – qualifications from certificate 1 to certificate 4 (currently under review)
- laboratory operations (cross-industry: code PML99) – qualifications from certificate 3 to advanced diploma (currently under review).

The process manufacturing training packages can be purchased direct from Australian Training Products via the MLA website (www.mlaustr.com). Take the Training Packages link, select the appropriate training package at the bottom of the page, then scroll

down to click on “Purchase online from Australian Training Products”. Complete the order form, including your credit card details, then click to submit the completed form to ATP. Or you can go to Australian Training Products direct at www.atpl.net.au and follow the on-screen instructions.

Training packages are collections of national competency standards (statements of workplace outcomes and the performance standards required to achieve those outcomes) packaged into portable and nationally recognised qualifications. The competency standards have been developed in full collaboration with industry.

Training packages also usually include a range of support materials to assist learners and their trainers in achieving competency.

MLA is based in Sydney.

MORE INFO? QIKREPLY 20

Tubing for pyrolysis

Sandvik Steel has developed a production method for internally, longitudinally finned, cold finished tubes for use as pyrolysis tubing in ethylene furnaces.

In the ethylene process, steam and hydrocarbon are mixed together and heated, resulting in a tube metal temperature of between 900°C and 1150°C and extremely aggressive and corrosive conditions. To extend the life of tubes in such an environment, Sandvik produces the required 50mm-76mm outside diameter finned tubes in a modified high temperature steel grade Sandvik 353MA (UNS S35315) – an austenitic, chromium-nickel steel alloyed with nitrogen and rare earth metals. The chemical composition of Sandvik 353MA is optimised to provide a material with high carburisation and oxidation resistance. It has a high creep strength and maintains good structural stability in the temperature range required for service in ethylene furnaces.

Longitudinal fins increase the inside surface area of a tube by up to



Internally, longitudinally finned, cold finished tubes have been developed for use as pyrolysis tubing in ethylene furnaces

25% and this enlargement of the tube's inside area improves heat transfer, which in turn means increased productivity for ethylene producers. The new tubes from

Sandvik require a lengthy production route which includes extrusion followed by cold working.

MORE INFO? QIKREPLY 18



NEW PRODUCTS

Network protection

Top Layer Networks has released its Attack Mitigator IPS product suite, an in-line solution that detects and blocks intrusions and network attacks that firewalls miss.

The suite of products allows good traffic to pass through quickly while actively blocking malicious traffic such as hybrid attacks, HTTP worms, SYN floods, protocol and traffic anomalies, DoS and DDoS.

Features include:

- multigigabit performance enabled by ASIC design, optimised deep packet detection algorithms and embedded application libraries
- line bypass, active/active and redundant configurations even in complex asymmetrical environments
- TopFire architecture, which provides stateful, multimethod detection with patented algorithms and hardware-optimised detection methods
- exact actions (block, limit, alert) on malicious and suspicious traffic
- quick advisory and update service that addresses growing number of intrusions

and attacks.

The suite of products consists of:

- Attack Mitigator IPS 100 – 100Mb departmental solution
- Attack Mitigator IPS 1000 – 1Gb enterprise solution

- Attack Mitigator IPS 2400 – 2Gb solution with redundant configuration
- Attack Mitigator IPS 2800 – 2Gb solution with active/active high availability configuration.

MORE INFO? QIKREPLY 17

Measuring in harsh environments

National Instruments' new Compact FieldPoint product line is a small, rugged, intelligent platform that extends the reach of LabVIEW software to harsh industrial environments, such as embedded machine control, industrial data acquisition, data logging and in-vehicle applications.

The line consists of 20 I/O modules and three intelligent controllers that perform analog and discrete control, user-defined data logging, and advanced inline math and signal processing. With these processing capabilities, engineers and scientists can perform signal generation, calculus, curve fitting, statistics, and run PID loops, fuzzy logic, and optimal control routines.

Compact FieldPoint incorporates a solid

metal backplane for stand-alone mechanical ruggedness and stability. Four or eight-slot backplanes and steel screw fasteners enable the modules to endure high vibration applications, even when mounted on heavy machinery or in vehicles.

The series operates in temperatures ranging from -25°C to 60°C, and has one RS-485 and three RS-232 serial ports.

National Instruments has also opened LabVIEW Zone on its website to help LabVIEW users worldwide to share code and application solutions, network with other users, and access a range of NI and user-developed resources to improve their skills.

MORE INFO? QIKREPLY 16

Universal and laboratory film tester

Rheology Solutions now has the Autograph AGS-J Table Top Type Universal Tester and On Line Laboratory Film Test System available.

The Autograph AGS-J is a column extension type universal tester. All operations of the unit are made using the operation panel with a digital LED display showing the actual force or stress and either elongation or strain. Force-displacement curves can be recorded on any user-selected scale and a variety of jigs are available including:

- spring-characteristic evaluation jig
- 45° peel test jig for printed-circuit boards
- cycle bending test jig
- bending test jig.

The new On-Line Laboratory ALFA from Optical Control Systems (OCS) incorporates a film-test-system which allows the measurements and recording of in-homogeneities and black specks as well as other physical, chemical and rheological parameters important in the production of polymers.

The ALFA system combines a measuring extruder 20/25D (type 20/26) with gear drive, in combination with a chill roll (CR-7 or CR-8) and winding unit, and is used in the produc-

tion of narrow cast film especially for quality control. The system is suitable for use in a laboratory or on-line.

With special rotating bypass systems, granules are directly taken from the process and tested, with the excess granules being returned.

The reaction of the system to deviations is usually determined by the length of time the material is in the extruder, with a maximum of three minutes. During this time, the product is held in an intermediate silo. Aside from a purely optical assessment of film, the ALPHA also measures its thickness, as well as the concentration of any additives.

MORE INFO? QIKREPLY 18

For more information on any of these products, send an email to dgrant@engaustr.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.