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NZIC Chemistry IN NEW ZEALAND

ISSN 0110-5566

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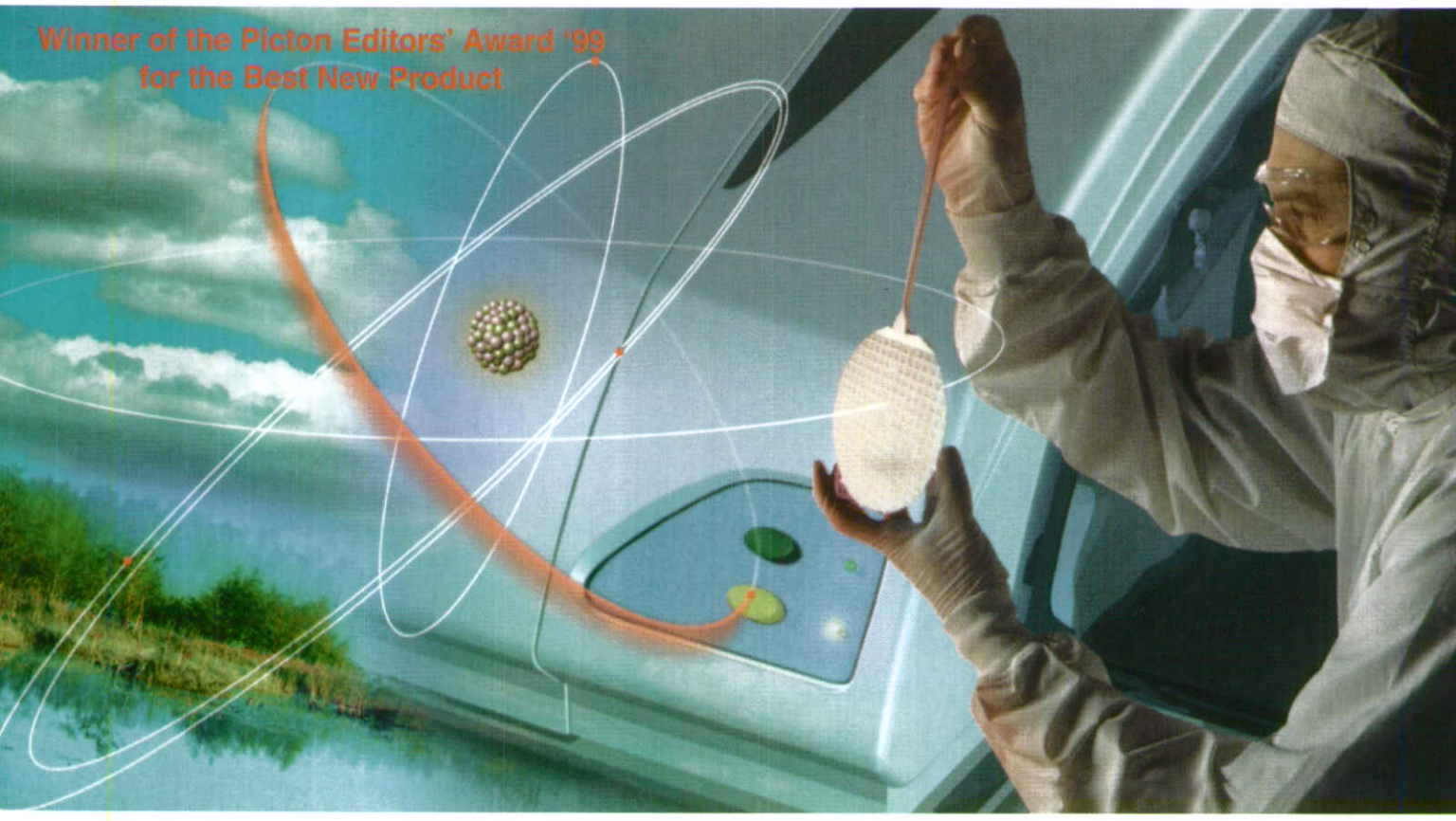

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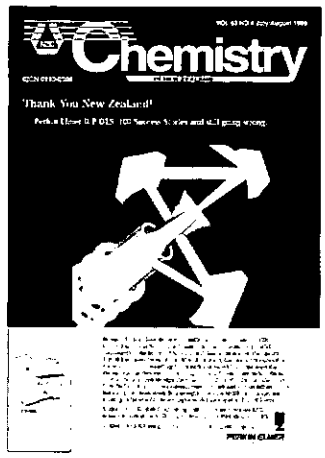
UP FRONT ...

THANK YOU NEW ZEALAND! PERKIN ELMER ICP-OES: 100 SUCCESS STORIES AND STILL GOING STRONG

Recently Perkin Elmer delivered, installed and commissioned it's 100th ICP-OES system in New Zealand/Australia.



For further information see the cover story item on page 2

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IN THIS ISSUE ...

COMING UP ...

September 1999 - Dairy Industry Production and Research, UV, VIS, NIR Spectroscopy, Microscopy

November 1999 - Nutrition, Pharmaceuticals, Cosmetics, Microbiology, pH, Titration, Mixing

Deadline for material:
5th of the month of publication

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COVER STORY

Thank you New Zealand! Perkin Elmer ICP-OES: 100 success stories and still going strong

Recently Perkin Elmer delivered, installed and commissioned it's 100th ICP-OES system in New Zealand/Australia. One of the most successful instruments in the history of New Zealand/ Australian science, the Optima ICP-OES accounts for more than 80% of these installations. What makes this success even more rewarding is that each year even MORE customers discover the success that they can have with Optima and Perkin Elmer. Indeed the last 12 months have been amongst the most successful in the Optima's history in New Zealand/Australia; our extensive user-network and support infrastructure has also grown from strength to strength. There are MORE Optima systems running 24 hours a day, seven days a week than any other ICP-OES system.

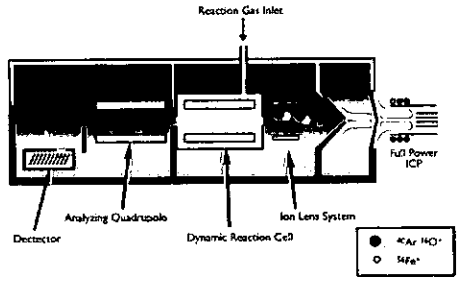
While Perkin Elmer was busy installing the 100th ICP-OES, in Orlando, USA they were receiving the award for the best new innovative product .....

Perkin Elmer's Award Winning New Elan 6100 DRC Redefines ICP-MS For Ultratrace Analysis

Perkin Elmer SCIEX introduces the new ELAN 6100 DRC Inductively Coupled Plasma Mass Spectrometer (ICP-MS) designed to eliminate argon-based interferences and allow for the routine detection of iron, calcium, potassium, chromium, selenium and arsenic. The Elan 6100 DRC spectrometer now gives the analytical chemist the ability to detect and measure these and other critical elements at the parts per trillion and quadrillion levels.

At this year's Pittsburgh Conference in Orlando, Florida, the instrument impressed potential customers, and the attending editors who voted for the instrument to receive the PITTCON Editors' GOLD award for best New Product. The instrument was nominated based on its design and break-through technology.

A new and exciting breakthrough, the dynamic reaction cell (DRC) is redefining the way ICP-MS is done. By eliminating plasma-based polyatomic species before they ever get to the quadrupole mass spectrometer, some of the worst spectral interferences are eliminated by a process called chemical resolution.



The sample ion beam is scrubbed of interference by the DRC.

What is Chemical Resolution?

Chemical resolution is a process to selectively remove interfering polyatomic or isobaric species from the ion beam using controlled ion-molecule chemistry. Chemically scrubbing the interferences from the beam before they enter the analyser, results in a significant improvement in detection limits, especially for difficult elements like Fe, Ca, K, Cr, As and Se.

A More Efficient Approach

No other technology has this kind of power. Unlike the more simplistic collision-cell, the unique patent-pending DRC technology not only reduces the primary interference, but also eliminates sequential side reactions that create new isobaric interferences. Unless kept in check using DRC technology, these uncontrolled reactions increase spectral complexity, and cause unexpected interferences.

The high efficiency of the chemical resolution process also avoids significant sensitivity losses typical of high-resolution magnetic-sector ICP-MS systems. This means elements like Fe, Ca and K can be detected at ppt and ppq levels, while maintaining high scan speed and sample throughput – hallmarks of a quadrupole system. What's more, a normal high-temperature or "hot" plasma is always used for the analysis. Hot plasmas do not suffer the recognised drawbacks of cool or warm plasma approaches. These fragile, low-temperature plasma result in matrix effects and the formation of polyatomic compounds which can interfere with the analysis. Also, re-stabilisation delays associated with changing between cool, warm and hot plasma conditions, are avoided. This means increased sample throughput and more efficient multi-element analysis.

Choosing the Best Elan for Your Laboratory

The choice has never been easier. If you need a rugged, reliable, easy-to-use workhorse, you need the ELAN 6100. A platform proven in more laboratories than any single ICP-MS instrument, the ELAN 6100 will tackle your high sample workload using standard operating procedures and fully automated methodology. High productivity laboratories running tough environmental, clinical and geochemical samples can generate profitable revenues, and achieve payback on their ELAN 6100 investment in only a few months.

If you are pushing the limits and looking for the cutting edge in ICP-MS performance, like those in the environmental sector, look to the DRC. It offers the ultimate in interference reduction, detection capability and flexibility, and can also be switched on-the-fly to operate in standard ICP-MS mode.

If you would like more information about the ELAN 6100 Series:

Call or fax Laurence Van Dam in our Auckland office on:
Ph: 0800 776 767, Fax: (09) 2756425
Email: vandamLF@perkin-elmer.com
circle number 1 on the reader reply card

NZ SCIENCE SCENE

FOUNDATION DEFINES PORTFOLIOS OF RESEARCH

The Foundation for Research, Science and Technology is now making rapid progress in implementing the new Foresight-based RS&T investment system.

As expressed in "Blueprint for Change", the Government has set new criteria for its investment in knowledge and technologies which will generate social, environmental, and economic benefits for New Zealand. Through Foresight, industry groups from all over the country contributed to the process last year with some 140 sector strategies. A key step for the Foundation this year has been to define outlines for research portfolios, or clusters of related portfolios, based on those sector strategies.

Chief Executive Steve Thompson, said the Foundation has now proposed 27 strategic portfolio outlines (listed at www.frst.govt.nz). These form the basis of consultative meetings with users and providers currently taking place.

The 27 portfolio outlines are assigned to one or more of five groups:

- Innovation-based enterprises
- Infrastructure and resources
- Maori development and advancement
- Social, economic and public life in New Zealand
- Environment and biodiversity.

Some examples of portfolio outlines under Innovation-based Enterprises are arable food and feed-based industries, and new technological and human capacity capabilities for manufacturing.

Under Social, Economic and Public Life there will be portfolios such as research on families and communities, and recreation and tourism.

"Foresight is now established as a process for change in the way this country innovates. The strategic portfolio outlines we've proposed are likely to be modified as we move through the consultation process and will be continually revisited and updated. We'll be doing this in cooperation with Government and stakeholders," Dr Thompson said.

Existing research programmes funded by the Public Good Science Fund will soon be mapped over to strategic portfolio outlines and gaps identified. Negotiations under the new portfolios are expected to start in September, leading to contracts in place by July 2000.

The Foundation welcomes your feedback on its list of portfolios. You can make contact via its website at www.frst.govt.nz or send them an email at pgsf@frst.govt.nz

UNIVERSITY OPENS "GATEWAY ANTARCTICA"

The University of Canterbury has established a Centre for Antarctic Studies called "Gateway Antarctica". The name is highly appropriate, Christchurch being the gateway city for the Antarctic operations of New Zealand, the United States, Italy and other nations.

"Gateway Antarctica" is intended to become a national centre for scholarship, teaching, learning and research. It will interact strongly with international university and governmental organisations concerned with Polar Studies, the emphasis of activities being on Antarctica and the Southern Ocean. It is hoped that personnel attached to the Centre will become involved in policy development, Antarctic planning, development of environmental protocols etc. The Centre will also operate a commercial or consultancy arm pursuing contract work for a variety of national and international clients.

This year the University of Canterbury has taken some new initiatives in the area of Antarctic studies with strong support and encouragement from Antarctica New Zealand. These include:

- transfer of Antarctica New Zealand's library to the University;
- incorporation of the Royal Society's International Centre for Antarctic Information and Research (ICAIR) from 1 January 1999;
- the establishment of a Board of Antarctic Studies; and
- the development of a graduate level certificate course in Antarctic Studies.

All these will now come under the auspices of Gateway Antarctica. The Board of Directors of the Centre is:

Chair: Associate Professor Steve Weaver (Geological Sciences); Members: Professor Bob Kirk (Pro-Vice Chancellor, Research); Dr Wendy Lawson (Geography); Dr Jane Shearer (Research Officer); Ms Gillian Wratt (CEO, Antarctica New Zealand); Professor Peter Barrett (Director, Antarctic Research Centre, VUW); Mr Garry Moore (Mayor of Christchurch); and Mr Richard Westlake (Westpac South Island Manager).

The position of Director, which incorporates a Chair in Antarctic and Southern Ocean Studies, is currently being advertised. Most of the staff of the Centre will be members of the teaching departments of the University and will contribute to the teaching and research programmes developed by Gateway Antarctica.

University of Canterbury is of the opinion that "Gateway Antarctica" will contribute to increased understanding and more effective management of the Antarctic and Southern Ocean by being a focal point and a catalyst for Antarctic scholarship, attracting national and international participation in collaborative research, analysis, learning and networking.

For further information contact s.weaver@geol.canterbury.ac.nz

NEW SECONDARY TEACHING DEGREE

The University of Otago will launch New Zealand's first Secondary teaching degree next year. University Director of Teacher Education Dr Ruth Ethell says the BTchg (Secondary) will offer graduates high quality teacher education based on the latest research and practice. Advance publicity for the new degree will begin later this month.

FIRST WOMAN PROFESSOR FOR LINCOLN UNIVERSITY

Lincoln University has appointed its first woman professor - plant pathologist Dr Alison Stewart, who heads the Microbial and Plant Sciences Group on campus.

The professorial appointment is one of six confirmed at the University Council's June meeting. The other new professors are Dr Tim Davies (Natural Resources Engineering), Dr Don Kulasiri (Computer Modelling), Dr Ron McLaren (Soil Science), Dr Ali Memon (Resource Management), and Dr David Simmons (Tourism).

Professor Stewart's particular research interest is the ecology and control of fungal diseases of economically important vegetable crops. Her work in this area has included research on the control of onion white rot, a costly problem for the New Zealand onion industry. In dealing with soil-borne pathogens she has been particularly interested in developing non-chemical methods of control - the biological and cultural approaches of integrated disease management.

Professor Don Kulasiri is a computational scientist in Lincoln University's Applied Management and Computing Division with a special interest in the development of computer models and systems. Recent research has involved him in computational modelling of the mechanical and hygro-thermal behaviour of biological materials, such as deformation in timber and composite materials, and simulation and modelling of environmental engineering systems, such as contaminant transport in aquifers.

Professor Ron McLaren, a staff member since 1981, has an international reputation in the area of heavy metal contamination of soils. Current projects include an Asia 2000 funded exchange assignment in China working on soil fertility on the Jianghan Plains in Hubei Province.

NIWA'S HIGH PERFORMANCE COMPUTING FACILITY

The Minister for Crown Research Institutes, Simon Upton, welcomed the launch of NIWA's High Performance Computing Facility (HPCF) as an "extremely exciting investment for New Zealand science."

"The acquisition of the most powerful super computer in the Southern Hemisphere will help NIWA take its place at the leading edge of international atmospheric and marine science research," he said.

"The fact that NIWA has been able to make this investment speaks volumes for the strengthening of New Zealand's science system that has occurred since the science reforms earlier in the decade, Mr Upton said."

"It was with this kind of forward investment in mind that the Crown Research Institutes were set up. NIWA is operating as a successful and well-performing company with sufficient financial strength and retained earnings to invest heavily in the future."

The HPCF will lead to improved weather forecasts and warnings, both short term and long term. NIWA climate scientists will be able to provide high quality information to those affected by El Nino and other climate variations. Their work will also feed into global research on the impacts of climate change. The computer will enable NIWA to continue to make substantial contributions to the world's understanding of recent trends in greenhouse gases such as methane.

SUPERCONDUCTOR DISCOVERY

Dr Jeff Tallon FRSNZ of Industrial Research Ltd in Lower Hutt and his German collaborator Dr Christian Berhard have discovered a new type of superconductor that unexpectedly is also a magnet. The discovery rejects the prevailing belief that the two properties are incompatible.

Dr Tallon produced the world's only high-temperature superconductor able to feed long-length wires. Superconductors become perfect conductors when cooled below critical temperature and can be used in motors, transformers, cables, and medical scanners.

Dr Tallon and Dr Bernhard realised their "designer" superconductor was also a magnet 10 months after the material was first made more than a year ago.

It is not the first magnetic superconductor - that was achieved in 1997 when an alloy of gold and indium was cooled to a few millionths of a degree above absolute zero. Dr Tallon's superconductor operates at 50 degrees above absolute zero and with modification, should reach 100 deg.

Dr Tallon said scientists and computer manufacturers had been investigating artificial materials made from films of magnetic materials alternating with films of metals or superconductors for use in very-high-density data storage devices for computers.

The new superconductor's crystal structure already had such layering naturally, said Dr Tallon.

Dr Tallon said the discovery was a classic example of the way science progresses - "sometimes slowly through planned research and fine tuning and sometimes in quite unexpected quantum leaps through new discoveries".

Dr Tallon was made a Fellow of the Royal Society in 1993.

TRIMBLE FELLOWSHIPS ANNOUNCED

The Trimble Trust has announced their Agricultural Research Fellowships for the current year. Horticultural research would appear to be the main beneficiary as all five Fellowships have been awarded this year to HortResearch scientists and four of the five relate to research in horticulture.

The Trimble Trust Awards are made annually to enable New Zealand researchers to travel overseas for the benefit of New Zealand agriculture. The five scientists who received fellowships this year will study the effective use of powder forms of biological control agents on horticultural crops, a specialised irrigation strategy for horticultural crops, modelling of the three-dimensional structure of fruit trees, under storey management of fruit trees, and tree physiology.

The recipients are:
Dr Balasubramaniam (Bala) from HortResearch, based at the Marlborough Research Centre in Blenheim.
Dr Horst Caspari from HortResearch, based at the Marlborough Research Centre in Blenheim.
Dr Adrian Walcroft from HortResearch at Palmerston North.
Dr Max Suckling from HortResearch based at Lincoln.
Dr Bill Laing from HortResearch based in Auckland.

ERMA FEES & CHARGES

ERMA New Zealand has released its pricing structure for fees and charges that will apply when making an application for a new organism and for other new organism-related services under the Hazardous Substances and New Organisms Act 1996. The fees and charges comprise:

- charge out rates for authority staff (generally $120 per hour), authority decision-making committee members and external advisers and consultants;
- specific fees and charges for applications under Part V of the Act;
- specific fees and charges for delegations of authority and decisions made under delegated authority;
- miscellaneous fees to cover costs of copying and other administrative matters.

During the 1999/2000 year, the Government will meet some of the costs of processing applications for new organisms. These subsidies are intended to cover the costs of public notification only and applicants will be responsible for meeting all other costs directly attributed to their applications. The Pricing Policy and a guidance document can be obtained from ERMA. The Authority's website is www.ermanz.govt.nz

1998 NEW ZEALAND SCIENCE AND TECHNOLOGY MEDALS AWARDED

The Minister of Research, Science and Technology, Hon. Maurice Williamson, presented the 1998 New Zealand Science and Technology Gold medal and 6 of the silver medals to recipients at the Grand Hall, Parliament Buildings, on 15 June 1999. The medals, administered by the Royal Society, recognise conspicuous contributions to the advancement of science and technology.

The gold medal was presented to Dr Bill Robinson FRSNZ for his role as a leader in the field of seismic isolation. The founder and chief executive of Robinson Seismic Limited (formerly Penguin Engineering Ltd) has devoted a good part of his career to the search for a safeguard for buildings and to ongoing innovations and improvements of the technology.

Mounting buildings in earthquake-prone areas onto bearings of different kinds had been suggested several times before, but it was Dr Robinson's 1970 invention of a lead-rubber combination, sandwiched between the foundations and the structure proper, that ultimately worked and prevented damage to property and loss of lives.

He is now widely acknowledged as a leader in this field. Even a severe stroke in 1990 did not deter him from his quest. On the contrary, the former director of the then DSIR Division of Physics and Engineering (now incorporated within IRL) bounced back to set up his own company, to invent new devices, and to travel the world talking to prospective clients about his work. He credits his bloody-mindedness and determination for both his successful career and recovery to full health. His focus now is on making the technology applicable to smaller structures such as family homes.

Dr Robinson became a Fellow of the Royal Society in 1991.

The silver medal recipients were:

Dr Clive Howard-Williams (Regional Manager, NIWA, Christchurch). His research focus is on the ecology and environment of freshwater bodies. Most recently he has studied lakes in Antarctica, with a focus on the growth and development of cyanobacteria, the dominant life form on the frozen continent. He has also contributed to science management, environmental management and the general advancement of science.

Dr Garth Smith (General Manager, HortResearch, Hamilton) His research focus has been on kiwifruit vine productivity and fruit quality. His contribution to plant science research includes the development of a predictive model and detailed descriptions of nutritional disorders.

Professor Neil Pearce (Director Asthma Research Group, Wellington School of Medicine). He is a leading epidemiologist with a particular interest in epidemiological methods. Most recent research (since 1988) has been focused on the epidemiology of asthma. He has led the Asthma Research Group since 1996.

Dr Allen Heath (Group Leader Entomology, AgResearch, Wallaceville Animal Research Centre), Dallas Bishop, David Cole (Scientific Officers, same group). The team developed components of an integrated management system for flystrike. The scientists were nominated for their long-term commitment to ensuring that research findings are made available to their farming clients in an understandable form.

Dr Jean Fleming (Senior Lecturer, Department of Physiology, Otago School of Medicine). She has worked as a scientist in reproductive physiology and genetics in sheep. Dr Fleming was nominated for both her contribution to science and her role in encouraging women to enter science careers.

Drs Fred Davey (Institute of Geological and Nuclear Sciences) and Tim Stern (Department of Geology, Victoria University). The team has been at the forefront of the multi-national geophysical study of the Southern Alps, a comprehensive investigation of the dynamics of continental collision and one of the most ambitious geophysical projects carried out in New Zealand.

Three silver medallists (Dr Barbara Burlingame, Rosemary du Plessis, and Dr Douglas Wright) were unable to attend and will receive their awards later.

WIDE-RANGING, PRACTICAL DEBATE AT ANNUAL CONFERENCE

Spuds, sheep and sugarbeet; paints, perfume and pesticides all came under the microscope at ERMA New Zealand's annual conference last month.

Lessons learnt from early new organism applications and the development of the hazardous substance regulations were also discussed at the two-day event at Te Papa on 10 and 11 June.

Nearly 300 delegates came to the conference, organised by ERMA New Zealand as a practical guide to the Hazardous Substances and New Organisms (HSNO) Act 1996. Over thirty speakers, including two international guests, were there to talk to delegates and answer questions.

"This was an important opportunity for everyone with an interest in hazardous substances and new organisms to learn about how the new system worked, how they could take part, what the issues were, and how they could use the application process effectively", said ERMA New Zealand Chief Executive Bas Walker.

"The conference also gave us important feedback on what we were doing well and how to improve the processes and policies we have developed."

People with different roles in the process for example, applicants, submitters and legal advisors, felt ERMA New Zealand worked in an open and helpful way. Issues were raised to do with a HSNO Amendment Bill, costs, laboratory work, rapid assessment, enforcement and ethics. Although much of this is in the hands of the Government, ERMA New Zealand has committed itself to make the Act work in the most effective way for everyone who takes part in the HSNO process.

A full set of conference papers is available for $10 from ERMA New Zealand. Selected papers have been loaded onto the ERMA website: www.ermanz.govt.nz

UPDATE ON THE HAZARDOUS SUBSTANCE REGULATIONS

Since the Minister announced a delay to the start of the new hazardous substances regime, a group of industry experts has met to review the technical details of the HSNO regulatory 'toolbox'. The group confirmed that the Act was sound and in accordance with key principles such as international harmonisation. They also made over 50 recommendations for improvements to the regulation's specifications. The Ministry for the Environment is working on these improvements along with members of the group.

Major recommendations of the expert review group

The expert review group recommended:

- changes to the regulations toolbox to make it more specific and closer to international systems
- guidance material is developed for the assessment process and to help anyone determine whether or not their substance is hazardous
- the Act is amended to streamline approvals and provide exemptions for properly contained research and development work
- an examination of the possibility of a staged implementation of the HSNO Act for hazardous substances to more closely match other countries' implementation of the globally harmonised system for classifying hazardous substances.

A key concern for industry is the level of information required for assessments under the Act. In contrast to the new organisms side of the HSNO Act there is no 'rapid assessment' provision for low risk hazardous substances. The Authority's flexibility under the current Act is therefore limited to how it specifies the level of information needed to support an application. It has discretion to set out different categories of information needed, according to the scope and potential impact of the use of the substance involved.

The Authority has identified certain types of application as relatively simple to deal with and so requiring less detailed information. A guidance note on this is currently being written.

To help applicants decide how much information is required for different types of substances ERMA New Zealand is developing a series of technical guidance notes. These will cover:

- the level of technical information required on hazardous properties for different types of substances
- how to decide whether the direct or indirect data (e.g. from internationally accepted mixture rules or structure activity relationships) available indicates that the substance is above any of the hazardous property thresholds, and so requires an application to the Authority.

Some of these guidance notes are likely to become approved codes of practice under the HSNO Act.

For more information please contact:
Peter Dawson, Senior Advisor, Hazardous Substances
Phone: (04) 4964833, Email: peter.dawson@ermanz.govt.nz

BIOTECHNOLOGY COUNCIL ESTABLISHED

The Government has set up a new biotechnology council. The Minister of Research, Science and Technology, Maurice Williamson, said the Independent Biotechnology Council (IBAC) has been set up to stimulate dialogue and improve public understanding of biotechnology. The council will also offer independent advice to the Government on the environmental, economic, ethical, social and health aspects of biotechnology.

The IBAC will be convened by Professor Peter Gluckman, an accomplished paediatric biomedical researcher, and Judge Mick Brown, Mrs Anne Dickinson, Professor Donald Evans, Dr Stephen Goldson, Professor Paula Jameson, Mr Graham Robertson, Mr Stephen Tindall, Associate Professor Ingrid Winship and Dr Janice Wright.

The IBAC will not work in isolation and will consult with the public, departments, agencies and organisations involved in biotechnology.

"There are some strongly held concerns about some aspects of biotechnology, notably genetic engineering. It's an area where

we need to tread carefully, always mindful of any risks to ourselves and our environment. IBAC will fill a large gap by investigating and informing the public about issues related to new biotechnology," said Mr Williamson.

HORTRESEARCH BOARD CHAIRMAN

Mr Joe Pope has been appointed as the new Chairman of the HortResearch Board. He replaces Mr Roger Davies, who retired on 30 June 1999.

The new appointee was CEO of the New Zealand Apple & Pear Marketing Board (ENZA) from 1984 to 1996 while it grew from a small distribution organisation with sales of $178m to an international marketer with sales of $874m, and rated by the World Apple Report as the most internationally competitive industry in 1995 and 1996.

Mr Pope has a Bachelor of Commerce degree in Economics, is now on the boards of a number of public and private companies and government agencies operating in the primary sector, international trade and the sports and entertainment industries. He also advises a number of companies on Corporate Strategy and Marketing.

VISIT OF UNITED KINGDOM FOODS PROFESSOR

The Institute of Food, Nutrition and Human Health at Massey University will be hosting Professor Jim Leslie between 20 October and 30 November 1999 under a C. Alma Baker Fellowship. Professor Leslie has just retired as Chairman of External Research for Unilever Foods Research and Engineering Division. Unilever Foods is the world's largest food company. He was also a special professor at the University of Nottingham.

Professor Leslie has experience in all aspects of food research, with a special interest in protein-lipid interactions. However, in recent years he has focused his attention on the interaction between academia, government, and industry. He has a thorough understanding of the situation in the EU at all levels, and has also followed developments in other parts of the world.

As part of his Fellowship, the Institute at Massey would like Professor Leslie to meet as many people as possible, from the research, government and industry sectors, who would benefit from his lifetime of expertise. For further information, email Dr Andrew Saunders (A.Saunders@massey.ac.nz).

'INNOVATION' - BUDGET BUZZWORD FOR 1999

New Zealand is suffering a brain drain and will miss the multi-million dollar biotechnology boat, unless government, universities and industry co-operate, advises Garth Cooper, University of Auckland molecular biologist.

A recent study ranked New Zealand only 14th of 17 countries that were analysed for their 'innovation capacity'. Given the world economy's increasing reliance on knowledge and innovation, this ranking sets a very serious scene for New Zealand's future ability to compete in the international market.

The Government's recent Budget announcement responded to industry warnings with a $5.6 million boost to establish a new economy research fund, 'Creating Innovation Opportunities'. This initiative is born from New Zealand's need to invest and take part in the increasing global 'knowledge-based' society.

"Keeping up with other countries is only half the battle," says the Ministry Chief Executive, Dr James Buwalda. "Now is the time for New Zealand to take action and initiate, innovate and lead. We need to do more than provide better, higher quality products - we need to develop new ones. The only way we can achieve that is by getting back to basics - and innovative research is a good place to start".

Estimating exactly what innovative research results could be 'worth' financially is very difficult. The financial risk associated with this kind of research deters many private investors. The new public investment, specifically to encourage innovative research, makes good economic sense - the results could ultimately bring new wealth to New Zealand's economy.

"Until now, much of New Zealand's research focused on further development of businesses and industries that already exist," Dr Buwalda explains. "The new earmarked fund encourages researchers to delve into uncharted areas - their discovery could be the spark that ignites a whole new commercial enterprise. New Zealand is then in a solid position to generate a competitive edge just by being the 'first'."

At the very least, the new fund recognises one of New Zealand's most valuable assets - its intellectual capital. Fostering an innovative culture reduces the threat of intellectual 'flight' to New Zealand's competitors.

The adage 'knowledge is power' seems to run through the Government's long-term strategy to stimulate an innovative culture in New Zealand. "Nurturing New Zealand's intellectual capital will give us a good foothold into the competitive 'discovery' market. However, this new fund is just one part of our overall task to build a strong science and technology infrastructure, a highly skilled workforce, and to unearth quality information and an entrepreneurial spirit," concludes Dr Buwalda.

BLUEPRINT FOR CHANGE FOCUSES INVESTMENT ON OUTCOMES

The Government has released its Blueprint for Change which outlines policies and procedures for its research, science and technology investments.

The document is based on a vision of New Zealand as a globally competitive knowledge society and is set in a context of its RS&T:2010 document, which outlines the Government's strategy for research, science and technology to the year 2010.

The Government is looking to:

- expand the knowledge base
- enhance and stimulate learning systems and enterprise
- improve competitive positioning
- increase technological capability
- develop and apply new knowledge-based processes and technologies
- increase and build on the knowledge and understanding of environmental systems and of social well being.

The blueprint sets out an investment framework outlining:
- a set of goals to indicate key directions
- a set of target outcomes
- a performance measurement system linked by RS&T investments to the science envelope goals.

It also identifies what Government seeks to achieve through its investment, rather than how much it proposes to spend.

Millennium Vision

"This approach follows the Foresight Project that asked the question, what sort of country do we want to live in in the next millennium. We are now in the position of defining those areas which we want to put our investment towards, for the benefit of current and future generations of New Zealanders," Mr Williamson said.

Because of the long-term nature of many research, science and technology goals, the Blueprint necessarily sets out long-term directions for research. The four goals are to accelerate knowledge creation, to use RS&T to enhance the competitiveness of New Zealand business, to improve our ability to sustain and maintain a healthy environment, and to ensure all New Zealanders enjoy health and independence with a sense of partnership in our future.

The changes outlined in the Blueprint will be implemented over the next two years. By June 2004, the transition to the new system of Government investment in research, science and technology will be completed.

Roles and Responsibilities

The Blueprint clarifies the roles of each player in the innovation system. It defines the role of the Ministry as:
- Assessing purchase agent analysis of investment opportunities
- Representing the value of Government's investment in RS&T
- Acting as the Minister's agent
- Negotiating purchase agreements with providers
- Monitoring purchase agent performance and how contracted outputs are delivered.

Purchase agents' role is defined as:
- Managing their investment in ways that contribute to target outcomes
- Negotiating portfolios of RS&T programmes that contribute to each outcome
- Providing an annual strategic analysis of investment opportunities to the Minister of RS&T.

Providers
- Contribute to the annual budget process by providing information to purchase agents
- Increasingly think outside of particular sector groupings and make wider connections
- Recognise the focus Government places on innovative capacity.

Users
- Many users have contributed directly to the definition of target outcomes through the Foresight process and will continue to engage as they think about their business differently and invest in RS&T.

Stewardship

The Blueprint identifies stewardship as an important concept because it defines the direction in science system decision-making. There are 10 specific expectations of purchase agents in the allocation of resources to RS&T activities through the science envelope. These are the 10 "stewardship expectations":
- Outcomes focus
- Sector support
- Balance
- Collaboration
- Smart purchasing
- Standards
- Full cost
- Strategic analysis
- Responsiveness to Maori
- Global connectedness

The Blueprint is a result of the Foresight Project, providing a framework for RS&T investment that has been developed to ensure New Zealand can play an effective part in the global knowledge economy. It takes a flexible, adaptive approach.

1999 NEW ZEALAND ECOLOGICAL SOCIETY AWARD

Dr CM (Kim) King, Editor of the *New Zealand Journal of Zoology* and the *Journal of the Royal Society of New Zealand* has been awarded the 1999 New Zealand Ecological Society award at the recent society conference in Blenheim. This award, which is made annually, recognises society members who have made an outstanding contribution to the study and application of ecological science.

CHEMISTRY TEACHERS' CONFERENCE

Science should be understandable and accessible to all according to David Katz from Cabrini College, USA, who was a keynote speaker at ChemEd 99, the chemistry teachers' conference held at Waikato University during the school holidays.

Almost 200 teachers gathered for 4 days to refresh, invigorate, discuss, and debate at the conference which was jointly supported by the New Zealand Association of Science Educators and the New Zealand Institute of Chemistry and organised by a local committee drawn from the education and chemistry fraternities under the leadership of Bev Cooper, University of Waikato School of Education and Anne Hume of Hamilton Girls' High School.

Those attending had the opportunity to update themselves on current research in chemistry, marvel at the pyrotechnic wonders of Xena and Hercules, hear about the development of Achievement Standards under development for "Achievement 2001" and learn of some of the more unusual uses of chemical analytical techniques. It is at occasions such as this where those in the fields of teaching and research come together with other researchers, teachers and professional chemists that true benefit for our education system occurs.

David Katz followed his participation at ChemEd 99 with presentations at Exscite in Hamilton, Science Alive! in Christchurch, and Victoria University, Wellington.

Another outstanding presenter at ChemEd 99 who also gave a presentation in Wellington was Sister Mary Virginia Orna of the Chemical Heritage Foundation and Professor of Chemistry at the College of New Rochelle, NY. Sister Mary Virginia gave a fascinating account of the way that modern methods of chemical analysis can be used to determine the provenance of materials such as stained glass shards, identify pottery shards and enable reconstruction of vessels from a collection of broken fragments, detect art forgeries, and apply the results of such application to the unravelling of the history of the Shroud of Turin.

Sister Mary Virginia feels strongly that science fascinates and, like David Katz, that we must ensure that we do not lose the sense of wonder and fun.

DEVELOPING THE KNOWLEDGE SOCIETY

Budget Changes

The 1999-2000 estimates include a total of $426.249 million for Vote: RS&T.

This is an increase of $14.798 million, or 3.6% over the 1998-1999 RS&T budget of $411.451 million.

Details of expenditure within Vote RS&T are given below in Table 1.

Creating Innovation Opportunities - the 'new economy' research fund

Creating Innovation Opportunities is designed to generate knowledge, skills and technologies that will support the development of new 'knowledge-based' businesses and industries in New Zealand.

Overseas experience shows that new industries and businesses are often spawned from basic research.

Many countries are benefiting from the growth of the 'new-economy', based on areas such as information technology, biotechnology, advanced materials and the combination of these and traditional economic activities.

Creating Innovation Opportunities is designed to increase the pool of exploitable basic research findings. We cannot predict exactly which areas of basic research are likely to lead to new enterprises. We do know that by deepening our stock of basic knowledge we increase our chances of finding the growth points.

This new fund, coupled with a $1 million increase for the Marsden Fund, reflects the Government's continued commitment to basic research. This commitment will be strengthened further as indicative funding for Creating Innovation Opportunities moves to $11.25 million in 2000-2001.

The Government will decide who will act as purchase agent for the new fund in the last half of 1999. It aims to call for research proposals and put new projects in place in the first half of 2000.

Table 1: How Public Investment In Research, Science & Technology Is Distributed

Output Class	1999-00 Estimates	% Vote	1998-1999 Revised $ million	Change	Responsible Agent(s)
Research, Science & Technology					
Public Good Science and Technology	326.985	76.71	317.735	9.250	FRST, HRC
Non-Specific Output Funding	26.766	6.28	26.131	0.635	FRST
Marsden Fund	22.839	5.36	21.839	1.000	RSNZ
Technology New Zealand	13.694	3.21	15.472	-1.778	FRST
Creating Innovation Opportunities	5.625	1.32	-	5.625	to be determined
Human Resources Development	5.235	1.23	5.235	0.000	FRST, HRC
Provision of National Measurement Standards	4.557	1.07	4.154	0.403	IRL
Promotion of Science and Technology	3.511	0.82	3.711	-0.200	RSNZ, FRST + others
International Science and Technology Linkages	1.038	0.24	1.038	0.000	RSNZ, MoRST
Science and Technology Publications	0.467	0.11	0.467	0.000	RSNZ
RS&T total	**410.717**	**96.36**	**395.782**	**14.935**	
System Overheads					
Contract Management for Science & Technology	9.111	2.14	9.211	-0.100	FRST, HRC, RSNZ
Policy Advise for Research, Science & Technology	0.400	0.09	0.400	0.000	FRST
Science and Technology Policy Advice	5.38	1.25	5.385	-0.037	MoRST
Management of Contracts for Non-Departmental Outputs	0.573	0.13	0.573	0.000	MoRST
Overheads Total	*15.432*	*3.62*	*15.569*	*-0.137*	
Convention Du Metre	0.100	0.02	0.100	0.000	NZ Contribution
Vote RS&T Total	**426.249**	**100.00**	**411.451**	**14.798**	

Key: MoRST - Ministry of Research, Science and Technology; FRST - Foundation of Research, Science and Technology; HRC - Health Research Council; RSNZ - Royal Society of New Zealand; IRL - Industrial Research Ltd.

[1]NB all figures are GST inclusive. [2]These examples are illustrative only and may or may not describe contributions that are ultimately contracted.

INVESTMENT IN INNOVATION

Changes in Public Good Science and Technology Funding
Table 2 below sets out how the extra $9.25 million in Public Good Science and Technology funding will be distributed.

All Public Good Science Fund Outputs (the first 17 listed in Table 2) except Horticulture, Arable and Other Food and Beverage Industries, receive increases in funding. The pattern for distribution follows that projected in the statement of Government policies and priorities for Public Good Science and Technology, published in July 1997.

The Health output receives the largest increase in the Public Good Science and Technology Output Class. The increment of $2.6 million will almost complete the shift to full-cost funding for health research.

Other Key Changes

- The amount set aside for the provision of national measurement standards receives a 9.7% increase. This increase reflects the Government's ongoing commitment to support New Zealand's technological infrastructure, particularly chemical standards.
- The increase in non-specific output finding of $635,000 reflects the increment in 1998-1999 PGSF contracts that were awarded to Crown Research Institutes in 1999-2000.
- Table 1 shows a decrease of $1.778 million in the appropriation for the Technology New Zealand scheme but this will be offset by a draw-down from reserves, so that the total expenditure in the scheme will remain at the 1998-1999 level.

All the other changes shown in Table 1 are minor.

Innovation Examples[2]
The following examples, based on current overseas research, show the types of research that might be funded by Creating Innovation Opportunities.

- Research into a wide range of biochemical and biophysical processes for use in environmental management, agriculture and medicine. Example: Research into detergent-like chemicals in the USA will enable diesel fuel to be diluted with up to 15% water, resulting in greater efficiency from existing diesel engines, cleaner emissions and extended fuel supplies.

- Investigations into polymers that could lead to the development of a wide range of materials for use in biological and industrial processes. Example: New developments in chemicals used to control the growth of polymers used for plastics may create a much wider range of plastics for uses such as dental fillings and replacement bone cartilage.

- Understanding the physics of motion at the micro-scale for potential application to the manufacture and application of microelectromechanical machines. Example: The wider use of nanotechnology (technology that deals with very small dimensions) is limited by an understanding of the physics of motion at very small scales where friction is a major force. Research into the types of materials and lubricants for nanomachines is only in its infancy.

- Research into magnetic fields and electromagnetic waves for applications in optical computers and medicine. Example: Pulses of light passing through a field of very cold atoms can be slowed to 17 metres/second, giving new insight into optical properties that may form the basis of a new generation of computers.

Table 2: Expenditure For Outputs Within The Public Good Science and Technology Output Class

Science and Technology Output	1999/2000 $000's	1998/99 $000's	Change $000's
Animal Industries	36,763	36,719	44
Dairy Industries	14,065	13,678	387
Forage	21,457	21,266	191
Horticulture, Arable and Other Food and Beverage Industries	51,300	51,300	0
Forestry and Forest Product Industries	24,377	23,953	424
Fisheries and Aquaculture Industries	8,203	7,858	345
Manufacturing Industries and Industrial Technologies	32,010	31,304	706
Tourism, Commercial and Other Services	2,220	1,587	633
Information, Communications Networks and Services	4,270	3,866	404
Construction	5,424	5,175	249
Energy	6,378	6,120	258
Transport and Distribution Systems	1,845	1,692	153
Society and Culture	7,777	7,353	424
Earth Resources and Processes	17,617	17,057	560
Land and Freshwater Ecosystems	35,066	34,171	895
Marine Environments, Climate and Atmosphere	25,273	24,359	914
Antarctic Research	2,319	2,256	63
Health	30,621	28,021	2,600
Total	**326,985**	**317,735**	**9,250**

[1]NB all figures are GST inclusive. [2]These examples are illustrative only and may or may not describe contributions that are ultimately contracted.

NEW ZEALAND SCIENCE & TECHNOLOGY MEDALS - CALL FOR NOMINATIONS

The Royal Society is calling for nominations for the 1999 New Zealand Science & Technology Medals. The medals were instituted by the Royal Society at the request of the Government to recognise and honour those who have made exceptional contributions to New Zealand society and culture through activities in the broad fields of science and technology.

Science & Technology Medals will be awarded to persons or groups for conspicuous, continuing contributions to science and technology over an extended period, or for an outstanding specific contribution to the advancement of science and technology. Nominees will normally be expected to be living and working in New Zealand, but people living overseas with strong New Zealand connections, either personally or through their work, will also be eligible.

Nominations close on 31 August 1999 and must be made on the nomination form which is available from the Royal Society by emailling awards@rsnz.govt.nz

SCIENCE AND TECHNOLOGY PROMOTION FUND

Contestable funding of $400,000 for the 1999/2000 financial year has been made available by the Government to promote positive values and attitudes towards science, mathematics, social sciences, and technology in interesting, exciting and innovative ways.

Fund Objectives

Funds will be allocated to projects which demonstrate that they have been developed to achieve the following objectives:

- to impact on an audience that is not already showing a strong interest in, or expressing a strong understanding of, the value of science and technology in achieving the success and well-being of New Zealand;
- to effect a measurable increase in positive attitudes toward science and technology;
- to promote the value of science and technology in interesting, exciting and innovative ways.

Consideration must also be given to the following:

- the extent to which the activity addresses an audience not already participating and committed to activities related to science and technology;
- the extent to which a project fills a gap in existing science & technology promotion in New Zealand;
- the level of innovation, creativity and excitement of the proposed activity;
- the extent to which this funding leads to the commitment of non-Crown funding (either in the short term or the long term) which is otherwise unlikely to have been committed; and
- the applicants' relevant experience and proven ability to both manage projects and deliver their outputs.

While most grants will not exceed $30,000, there is provision for one grant of up to $100,000 for an activity which would have a major impact on a significant audience.

For more details, contact spratt.p@rsnz.govt.nz or taranchokov.a@rsnz.govt.nz. The application pack will be posted on the Royal Society website no later than Wednesday next week.

International News

NIWA SCIENTIST FOR NEW INTERNATIONAL CLIMATE PREDICTION INSTITUTE

A senior post in the new International Research Institute (IRI) for Climate Prediction, is to be taken up by NIWA climate scientist Dr Reid Basher. The IRI, based in Columbia University, New York, aims to capitalise on scientific knowledge of the El Nino and other climate processes in order to reduce the massive worldwide impacts and costs of climate fluctuations.

As Director Applications Research, Dr Basher will have responsibility for developing the methods and international relationships needed to properly apply climate predictions, for example in agriculture, water supply, human health, fisheries, etc. This will include networking with New Zealand climate science groups such as NIWA.

PENICILLIN RELIC PRESERVED

A mould that produced the first penicillin, grandfather of all antibiotics, has been acquired by the Smithsonian Institution. The mould is a round, grey, flat, fuzzy-looking substance about an inch and a half wide, encased in glass. Next to it is a facsimile of the reverse side, showing the handwritten inscription: "The mould that makes Penicillin. Alexander Fleming." Fleming, a Scot, developed penicillin in 1928. He had been working on the possibility of an agent to kill bacteria, but succeeded by accident. A culture of bacteria left unprotected was contaminated by a mould - a fungus from the air.

JUDITH C POË PRESIDENT OF THE CANADIAN SOCIETY FOR CHEMISTRY 1999-2000

The Canadian Society for Chemistry (CSC) has announced the election of Judith C Poë, MCIC, as their President for 1999-2000. Poë who holds an ARCS, MSc and DIC from Imperial College of Science and Technology, University of London, is a bioinorganic chemist and a specialist in the pedagogy of chemistry in the Department of Chemistry at Erindale College, University of Toronto. She is a 3M Teaching Fellow and a recipient of the Ontario Lieutenant Governor's award for Teaching Excellence.

During her year as President, Poë intends to focus on raising the profile of science education both within the CSC and publicly while at the same time continuing to lobby for the basic research interests of the profession. Her goal is to see an arm of the National Science and Engineering Research Council support research in science pedagogy and by this means recognise its importance to our culture, our productivity and our competitiveness of a scientifically literate society and the federal responsibility for it.

The Chemical Institute of Canada is a national association of chemists, chemical engineers and chemical technologists organised in three Constituent Societies: the Canadian Society for Chemistry, the Canadian Society for Chemical Engineering and the Canadian Society for Chemical Technology. It has approximately 5,700 members employed in industry, government and academia across Canada and internationally.

The CSC is the preeminent technical society for chemists in Canada with members from industrial and governmental research and development laboratories in addition to those from academia. Its annual conference, at which Poë recently assumed office, provides the national forum for exchange ideas for innovation and collaboration resulting from the research of its members. The Society's mission also includes recommending and scrutinising the standards of chemical eduction in Canada and interpreting the profession to the public.

GORDON THOMSON CHAIR OF THE CHEMICAL INSTITUTE OF CANADA 1999-2000

The Chemical Institute of Canada (CIC) is pleased to announce that Mr Gordon Thomson, FCIC is its new Chair for 1999-2000 having taken office at the recent annual general meeting in London, Ontario.

Thomson intends to focus on educational issues during his term. "Chemistry is the central science that brings forward so many exciting developments for the betterment of society, spanning a spectrum from food production to computer manufacturing. Canada's success in the world of development requires that we be much more effective in training our youth in the chemical sciences and engineering. It seems to me that The Chemical Institute has played a strong role in encouraging education excellence in the past, however with so many challenges facing educators today, further effort on our part seems appropriate", Thomson told the Institute's Annual Meeting attendees.

Gordon Thomson graduated from the University of British Columbia in 1964 with a BASc in Chemical Engineering. He joined Imperial Oil Limited, from which he retired in 1996. At Imperial Oil, Thomson's career included several engineering, development and operations assignments, in both the upstream production business and in the downstream products business. His assignments have included Executive Vice-President, Esso Resources Canada, and President, Esso Petroleum Canada. He has served as a Director of Interprovincial Pipeline Ltd, and as a Director of Imperial Oil Ltd. From 1978 to 1980, Thomson was assigned by Imperial Oil to Exxon International Company in New York. From 1988 until his retirement in 1996, Imperial Oil assigned Thomson to Exxon Company USA in Houston, Texas, where he was Vice-President, Marketing.

Patent Proze

by Jane Calvert and Greg Lynch

SEARCHING AND THE USE OF THE INTERNET

Before manufacture or commercialisation of an invention is undertaken in any country it is very good practice and strongly recommended that a search can be conducted at the local patent office. The reasons for conducting such a search include:

(i) Establishing whether your invention is likely to infringe any existing local patent. There have been many instances where companies or individuals have spent thousands of dollars preparing to launch a product to find out that if their product is launched it would infringe an existing patent; and

(ii) Establishing whether your invention is novel and could form the subject of a patent application. If the invention is novel it may be an option to secure patent protection for the invention. Not only does patent protection provide rights in the invention, but the patent process includes the public recordal of details of the invention at the local patent office. These details can be searched.

Nowadays with the internet being so accessible there are a number of websites available that one can access providing links to specific national patent offices. It is possible to conduct initial enquiry searches for patent information at the US, Australian, Canadian, Chinese and Hungarian Patent Offices using the internet.

Probably the best starting point is the US Patent and Trademark Office internet site at http://www.uspto.gov . This site is free to use and provides access to the whole US patent database from 1976 to the present day. A Boolean search can be conducted either by using keywords (including chemical nomenclature) or by using the patent classification system.

Typically it is desirable to narrow the scope of a search by entering the class by which the invention would be classified. Alternatively, a range of key words may be used in subsequent searches to conduct an initial enquiry.*

Any patent specifications of interest can be viewed and it is possible to order a copy of the patent specification. If you envisage that a number of patent specifications will be required one can set up an account with Optipat at http://www.optipat.com/ Optipat provides high quality TIFF files for approximately US$5.00 per specification.

If this first level of enquiry locates nothing of relevance then we would strongly recommend that you contact a patent specialist who can advise you on further options.

Your patent specialist will be able to conduct a detailed local or international search for you. International searches for New Zealand clients can be conducted in Australia, the United States or Europe using the official records of various national patent offices. Such an international search provides an indication of the novelty of a particular invention. It does not, in our opinion, provide an acceptable means of assessing the risk of a patent infringement in any particular country. We would recommend that infringement searches be conducted at each national patent office where the product will be launched.

As always, there are certain limitations inherent in searches of this type. Because the search only covers information available in published patent specifications, other information available for example in technical journals or trade literature is not covered and your patent specialist will outline the limitations.

Finally, searches of databases online are limited in that they are conducted using selected keywords or combinations of keywords. Identification of relevant patent specifications is dependent on these words being identified in the title and/or an abstract of the patent specification.

FURTHER SITES

A limited range of Patent Co-operation Treat (PCT) specifications can be searched at the following site:
http://pctgazette.wipo.int/eng/index2.html

A range of patent specifications from various countries can be searched at the following European site:
http://dips-2.dips.org/dips/ep/en/menu1.html

Patent information can be searched in Australia at the following site, although it is a difficult site to navigate around:
http://www.ipaustralia.gov.au/

It is possible to conduct internet searches at the Intellectual Property Office of New Zealand for trade marks. It is anticipated that patent information will be available at sometime in the future. The Intellectual Property Office of New Zealand website is located at:
http://www.iponz.govt.nz

* If you would like to receive a copy of our US database search instructions please contact us by email using the address below.

A reminder: If you have any queries regarding patents, or indeed any form of intellectual property, please direct them to:

Patent Proze
Baldwin Shelston Waters
P O Box 852, Wellington
Email: email@bswip.co.nz
Internet: www.bswip.co.nz

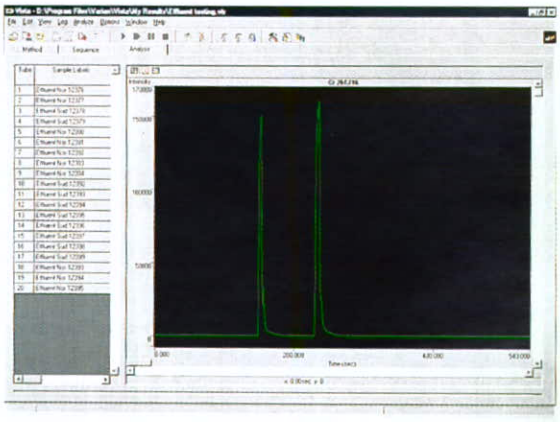
Jane Calvert

Jane Calvert and Greg Lynch are both employed in the patent department of Baldwin Shelston Waters, Patent and Trademark Attorneys and Solicitors, where they specialise in chemistry patents. Jane joined the firm after completing a PhD in chemistry at the University of Canterbury in 1994. Greg also joined the firm in 1994 after three years research at Industrial Research Limited in Wellington. Following completion of a PhD in chemistry at the University of Otago in 1989, he spent a two year period as a post-doctoral researcher at Oxford in the United Kingdom.

Greg Lynch

AAS, ICP-OES, ICP-MS FEATURE

VARIAN ANNOUNCES WINMASS - THE WORLD'S FIRST "E-READY" SOFTWARE FOR ICP-MS



Varian has announced WinMass, a new Windows 95/98 software platform for its UltraMass line of Inductively Coupled Plasma Mass Spectrometers (ICP-MS). The world's first "e-ready" ICP-MS software, WinMass features a new user programmable Quality Control Protocols (QCP) system, an award-winning "worksheet" user interface, and new Time Resolved Software.

WinMass is the first ICP-MS software platform to take advantage of e-mail and modem communications for integrating the ICP-MS into the laboratory. Unique "handshake" capabilities allow the UltraMass ICP-MS to communicate with other equipment for laboratory automation. For instance, via simple RS232 communications, the ICP-MS can be activated by a laser ablation accessory, autosampler, or process control device to start the analysis. In response, WinMass can "handshake" with the laboratory to turn off process valves, interrogate a network or LIMS system, or even send a fax.

Telediagnostics capabilities allows remote access to the UltraMass via a modem line, so users can check and correct the progress of an analysis remotely. Telediagnostics allows service engineers to accurately diagnose instrument faults remotely, ensuring minimum down-time and reducing maintenance costs. Another "e-ready feature is Mass-Net, Varian's free online users group ensuring that spectroscopists are kept up to date with the latest product and application information and allowing users to exchange experiences directly via e-mail.

The WinMass software follows Varian's award-winning worksheet design concept. Elements form the columns and solutions form the rows of the analysis "spreadsheet", allowing users to rapidly access all data by simply clicking on the appropriate cell. Worksheets can be chained together to analyse different batches of samples without interruption.

An improved Quality Control Protocols (QCP) program is designed to meet all of the requirements of the USEPA Methods 6020, 200.8 and 1638 and many international protocols. WinMass QCP includes a simple user-programmable language for test customisation and for creating user-specific tests that meet local QC regulations.

WinMass provides a high-speed Time Resolved Signal (TRS) capability for interfacing to chromatographic and other separation techniques such as HPLC. TRS is of growing importance in the environmental, food and life science markets, as users seek not only the level of an element in a sample but also the element's valency or molecular state. For example, TRS coupled with HPLC allows the distinction of the more toxic valency state of chromium VI from the less toxic chromium III.

WinMass includes a new comprehensive reporting system that allows complete user-customisation of printed and exported reports. Analytes can be quantitated on any possible combination of isotopes and the unique on-screen mass "fingerprint" automatically fits a library mass spectrum to the sample spectrum to aid identification. Separate report parameters for online and offline reports drastically reduce paper use and printing time.

WinMass is available from Varian, as a user-purchase upgrade and will ship standard with all new UltraMass ICP-MS systems. UltraMass ICP-MS systems are used for trace and ultra-trace level determination of a wide range of elements in samples as diverse as water, blood, serum, urine, soil, fine and process chemicals, petroleum products and semiconductor devices.

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VARIAN OFFERS NEW SOFTWARE FOR VISTA ICP-AES SPECTROMETERS

Varian has announced a comprehensive software upgrade for its popular Vista simultaneous inductively coupled plasma - atomic emission spectrometers (ICP-AES).

Release 1.1 software provides a high speed Time Resolved Signal (TRS) capability for interfacing the Vista ICP-AES with chromatographic and other separation techniques such as HPLC. TRS is widely regarded as the methodology of the future, as users seek not only the presence of an element in a sample but also the element's valency or molecular state. For example, TRS coupled with HPLC allows the distinction of the more toxic valency state of chromium VI from the less toxic chromium III, and the investigation of environmentally important organo-metallic compounds of tin, lead, and other elements.

In another major productivity addition, the software provides

new capabilities for the Fast Automated Curve-Fitting Technique (FACT) by allowing a rapid, one-step modelling of a sample "matrix" spectrum for correlation of spectral interferences. FACT modelling can now also be performed retrospectively after an analysis has been completed. This allows users to correct for spectral interferences that may not have been observed prior to the analysis.

The new Vista software upgrade includes further enhancements to Inter-Element corrections, data Quality Control Protocols, Standard Additions calculations, higher sample capacity analysis runs, and the support of other manufacturers' autosamplers.

The 32-bit, multi-tasking software operates under Windows 95/98 or Windows NT for simplified data transfer and industry standard networking. On-line video help of routine maintenance and operation tips are also included.

Vista release 1.1 software is a free upgrade for existing Vista users, and is available for immediate delivery.

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IMPORTANCE OF SPATIAL RESOLUTION IN LASER ABLATION ICP-MS

Varian has published application notes indicating that ultraviolet lasers are ideal for high-resolution spatial analysis and bulk

analysis of very small samples by Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS). Varian has demonstrated the effects of various operational parameters on spatial resolution (spot size).

Spot size in LA-ICP-MS is a function of laser power and focal point. As the laser power increases, the spot size increases. Maximum intensities for five species studied were an average of 150 times lower for a spot of approximately 10 µm than for a spot of approximately 100 µm. Maximum ablation and highest sensitivity are obtained when the laser is focused below the surface of the sample.

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US PRESIDENTIAL GREEN CHEMISTRY AWARD HAS STRONG NEW ZEALAND CONNECTION

Some 20 years of very clever and creative research by Professor Terry Collins, the New Zealand-born head of inorganic chemistry at Carnegie Mellon University in Pittsburgh, was recognised recently when Professor Collins won the 1999 US Presidential Green Chemistry Challenge Award. This is the highest US prize that is awarded for groundbreaking work in environmentally-friendly science.

James Wright (left) with Terry Collins at the Award Ceremony

Professor Collins' work has uncovered a way to harness hydrogen peroxide as an environmentally-friendly bleaching agent. Dr Paul Anastas, chief of the industrial chemistry branch of the US Environmental Protection Agency's Office of Pollution Prevention, described Terry Collins' research as "brilliant fundamental work". Dr Anastas recently visited New Zealand and presented a series of lectures on Green Chemistry.

Place a drop of hydrogen peroxide on your skin and you can see the chemistry in action. The bubbling that takes place is caused by oxygen being released from the peroxide by metal ions in the skin as oxidation occurs. Inside the body liver enzymes routinely utilise hydrogen peroxide to destroy toxins in the blood. Professor Collins' research team has developed catalysts that, like the liver enzymes, activate hydrogen peroxide and focus its oxidising power on particular targets.

"Nature accomplishes its goals by using a small number of elements and some complex chemistry, often employing natural catalysts, or enzymes to speed things up, but we [chemists] attain it by using almost the entire Periodic Table of the Elements. We need to practice chemistry like nature does", says Collins.

Hydrogen peroxide is a natural oxidising agent but under normal conditions it reacts too slowly to be useful in most industrial processes. Professor Collins knew when he began his research that certain metal ions could activate peroxide, but no one knew how to control the reaction so that it could perform useful functions.

Professor Collins began by selecting iron as the metal ion around which to build his catalysts. Some rhenium compounds were known to be able to activate hydrogen peroxide catalytically, but rhenium is very rare and expensive, whereas iron is abundant and, most importantly, safe. Next he and his research team set about constructing a suitable ligand to house the iron atom in the catalyst. The role of the ligand is to control the reaction by altering the properties of the iron atom in very special ways. The ligand also has to be very robust because the oxidation reaction is very vigorous, destroying anything in the vicinity of the metal ion that is susceptible to oxidation.

In the years that followed Professor Collins and his team designed potential catalysts, tested them and then analysed how they failed, then adjusted the design, tested, analysed and redesigned again and again. Finally in the last three years a workable catalyst was developed. This has an iron atom attached to a ligand comprised of nitrogen, hydrogen and oxygen atoms. The iron strips one of the oxygen atoms from the hydrogen peroxide making the highly reactive oxygen atom available to react with its target in an oxidation reaction.

Oxidation is a fundamental process in many industrial applications but current methods also result in some of the "dirtiest" chemistry practised, so the potential of Professor Collins' clean oxidation method is enormous. In the pulp and paper industry oxidation is used to remove the lignin from the wood pulp by bleaching. Two hundred years ago, chemists discovered that calcium hypochlorite could remove the lignin and leave the cellulose, and chlorinated bleaching agents have been the industry standard ever since for bleached pulp.

The big problem is that chlorinated bleaching agents produce toxic by-products such as dioxins, and an effluent that can turn streams and rivers the colour of Coca-Cola. Thus there has been significant environmental pressure in recent times to find an alternative to chlorinated bleaching agents for the pulp and paper industry. In April last year, US regulators gave pulp mills in the USA three years to phase out chlorinated bleaching agents. Ozone and molecular oxygen based processes are being researched but have not yet proven to be effective and the use of oxygen would require the bleaching to be done at high temperatures and pressures.

Two years ago Professor Collins began a collaborative research programme with Associate Professor James Wright and his group at the Chemistry Department of The University of Auckland to see how well his new catalysts would work in the pulp and paper industry. Collins and Wright had studied together and have collaborated on various other research projects. They invited Drs Ian Suckling, Robert Allison and Terry Fullerton from the Forest Research Institute in Rotorua to join the research team which included Jenny Hall, one of James Wright's PhD students. Jenny conducted much of the experimental work on the pulp bleaching as part of her PhD thesis. James Wright says that the results obtained to date with the Collins catalysts are

CE INSTRUMENTS NA2500 AUTOMATIC ELEMENTAL ANALYSER

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A simple analytical layout with no mechanical moving parts ensures all the gases generated by the combustion step are measured for a true quantitative analysis. This coupled with the latest developments in electronic mass flow control ensures greater stability of conditions thus better reproducibility throughout long batches of samples. This stability does away with the need for often repeated calibration standards dispersed throughout the batch of samples. This dramatically reduces running costs and sample batch turn around time.

The NA2500 is compatible with solid and liquid autosamplers and a range of detectors from ECD for trace sulfur analysis, IRMS for isotopic ratio analysis as well as the standard TCD for N and NC analysis, to make it the most versatile analyser in its field.

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Phone: (09) 3770392, Fax: (09) 3098514
Email: sales@alphatech.co.nz
circle number 21 on the reader reply card

DUAL TECHNOLOGY METER ACCEPTS NON-GLASS AND TRADITIONAL ELECTRODES

Select Systems are delighted to introduce the IQ150, a dual technology pH meter, which accepts both stainless steel non-glass sensors as well as any traditional glass pH electrode. Thanks to its shock-resistant, rubber holster this ultra-rugged system can withstand a 2 meter drop onto concrete.

Temperature compensation is automatic or manual as the user desires. Up to seven buffers are recognised automatically and the operator can choose between one- or two-point calibration. The stainless steel probe contains no glass, stores dry and requires no maintenance. It is ideal for liquids, viscous samples, penetration of semi-solids and surface measurements. Depending on whether speed or accuracy is most important, the display resolution can be adjusted from 0.01 to 0.1 pH. The flip-up stand built into the holster, together with AC adapter accessory allows the IQ150 to also be used hands-free as a compact laboratory bench meter.

Contact: Ken Browne
Email: kbrowne@electrode.co.uk
circle number 22 on the reader reply card

WATERS CHROMATOGRAPHY COLUMNS AND SUPPLIES CATALOGUE 1999-2000

The Waters Chromatography Catalogue is a very comprehensive listing of Waters' Brand Products and Waters' Sourced and Supported Brand Products. The catalogue lists information on solid phase extraction products, columns, filtration, vials and accessories, syringes, fittings and spare parts. Sample chromatograms and analysis conditions are included for most columns and the catalogue includes extensive application information on all aspects of chromatography.

Contact: Lesley Hockings, Alphatech Systems Ltd
Phone: (09) 3770392, Fax: (09) 3098514
Email: sales@alphatech.co.nz
circle number 23 on the reader reply card

J&W SCIENTIFIC'S CAPILLARY GC COLUMNS AVAILABLE IN 5-INCH CAGES FOR SMALL GC OVENS

J&W Scientific now offers chromatographers the entire line of capillary GC columns on 5-inch cages. Users of smaller ovens like HP-6850 and SRI-8610C can now order J&W's quality capillary columns to fit their instruments. These columns, like all of J&W's GC columns, are manufactured to the tightest QC specifications in the industry. The performance summary of each and every column is published and shipped with the column. Customers are assured of the quality of the column they purchase, each and every time, making J&W the "Best-

very exciting indeed. Our experiments show that the Collins' process can shorten the time required for bleaching pulp with hydrogen peroxide from 6 hours to under 1 hour and that the temperature needed for the process can be reduced from over 90 °C to 50 °C, making it economically viable through huge savings in energy costs, as well as being environmentally much cleaner. In the near future the team will be ready to conudct pilot plant scale trials in New Zealand pulp and paper mills. One very impressive feature of the Collins catalysts is that their properties can be "fine-tuned" in a rational way by making small design changes to the ligand. The Collins' team in Pittsburgh is already developing a set of second generation catalysts based partly on the results of the testing done in New Zealand.

Jenny Hall, James Wright and FRI team members Ian Suckling, Robert Allison and Terry Fullerton were all awarded certificates at the recent US Presidential Green Chemistry Challenge award ceremony in Washington DC in recognition of their contributions to Professor Collins' work on his new catalysts.

And Collins is already working on other applications for the use of hydrogen peroxide using the catalysts. "These catalysts have character and we can change them for special purposes". One project is developing a catalyst specifically to be used as a laundry bleach, where only very small amounts of the catalyst will be required in a box of laundry detergent because the catalyst is not consumed by the oxidation reaction. Another area under active investigation involves the use of these catalysts in cleaning up industrial effluent streams. Future projects include applications in water purification (including drinking water) and the clean up of toxic spills.

Chemistry in New Zealand plans to publish a technical article on the New Zealand research related to bleaching in the wood pulp industry later this year.

Professor Collins, was raised in Mangere Bridge. He was educated at Onehunga Convent School, Marcellin College and the University of Auckland, from which he graduated with a PhD. At Carnegie Mellon University, he leads his own research team of post-doctoral and post-graduate students. The university plans to establish a $10 million Institute for Green Oxidation Chemistry to accelerate his work.

References

Spice, B. CMU researcher develops bleaching method that's clean and green. ONLINE Post-Gazette. March 29, 1999 (http://www.post-gazette.com/healthscience/19990329greenchem3.as).

Bodger, S. Dedicated research promises a cleaner world. *New Zealand Herald*. July 15, 1999.

Fit" for their GC instrument. These specially configured columns can be ordered in any phase, size and dimension by simply adding a "-E" to the part number.

Contact: Barbara Bogue, J&W Scientific
91 Blue Ravine Road, Folsom, CA 95630, USA
Phone: (+1-916)-9857888, Fax: (+1-916)-9851101
Website: www.jandw.com
circle number 24 on the reader reply card

IT'S HERE ...
PIPETTING WITH LIQUISYSTEMS
BY METTLER TOLEDO
- VOLUME RANGE FROM 0.1 µL TO 5000 µL

Mettler Toledo have taken a long hard look at conventional pipettes — and have adopted their best tried-and-tested components in the new Mettler Toledo pipette system.

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Contact: John Small, Product Manager
Medic Watson Victor, Free Phone: 0800 508070
circle number 25 on the reader reply card

VARIAN, COMBINATION HEADSPACE, SPME, AND LIQUID INJECTION SYSTEM FOR GC AND GC/MS SYSTEMS

Varian is now offering Combi PAL, a combination headspace, solid phase microextraction (SPME), and liquid GC injection system for its gas chromatographs and GC/MS systems. According to the company, the first-of-its-kind system should boost the productivity of most GC stations by 50 percent or more, with analytical accuracy rising to an equal degree. The self-contained system is well suited for industrial analyses, pharmaceutical laboratories, environmental studies, the food and beverage industries, and forensics, chemical, and polymer markets.

The syringe-only concept combines the exacting manual sample injection technique of an experienced GC chromatographer with the precision and throughput of an automated sampling system. This approach eliminates potentially troublesome components such as switching valves and transfer lines in headspace mode. In liquid mode, Combi PAL injects two different injector positions without hardware modification. By combining static headspace with liquid injection and SPME in a single device, bench space is preserved and costs reduced. The unique, multi-injection capability permits speedy switching from one application to another on the same GC system.

In headspace mode, the robotic vial processing operation allows the user to analyse samples in a straightforward and simple way. For maximum throughput, the intelligently controlled vial transfer into the incubator oven ensures that a sample is always ready to be injected when the previous run is completed. In liquid injection mode, every injection step, e.g. fill/inject speed, hot needle injection, solvent plug, large volume injection, or standard addition, is individually controlled through the Combi PAL's advanced software package. Probe positioning precision is 0.1 mm and the compact Combi PAL weighs only 10 kg.

Contact: Mark Albertson, A.i. Scientific (NZ) Ltd
P O Box 35579, Browns Bay, Auckland
Phone: (09) 4781351, Fax: (09) 4781360
Email: aiscinz@ihug.co.nz
circle number 26on the reader reply card

NEW BLOOD ALCOHOL COLUMNS FROM J&W CAN STREAMLINE ANALYSIS AND INCREASE THROUGHPUT

The chemists at J&W Scientific, the world's largest manufacturer of high resolution capillary GC columns, have developed the perfect pair of specialised capillary phases for the analysis of blood alcohols. J&W's DB-ALC1 and DB-ALC2 can streamline the analysis and increase throughput of blood samples in the laboratory by one third. The matched stationary phase types have different and unique properties and selectivities that make them ideal for primary and confirmation column choices.

Blood alcohol analysis is one of the most common clinical analyses performed today. Historically run on packed columns, or by means of GC headspace analysis, the potential contamination from these biological samples poses a challenge for efficiency and timely chromatographic analysis. These new columns from J&W are suitable for both headspace and direct injection analyses. Each column is available with an inner diameter of 0.32 mm and 0.53 mm in 30 metre lengths, with a choice of film thicknesses.

Contact: Barbara Bogue, J&W Scientific
91 Blue Ravine Road, Folsom, CA 95630, USA
Phone: (+1-916)-9857888, Fax: (+1-916)-9851101
Website: www.jandw.com
circle number 27 on the reader reply card

DURAGUARD COLUMNS NOW AVAILABLE FROM J&W

J&W Scientific, the world's largest manufacturer of high resolution capillary GC columns, introduces DuraGuard. These columns are equipped with a built-in guard column, retention gap or mass spectrometer transfer lines. Guard columns are used to trap non-volatile sample residues. Retention gaps are used to focus the injected sample to improve the peak shapes when using on-column and splitless injectors. The guard column, retention gap or transfer line and the analytical column are made with a single, continuous piece of fused silica tubing, thus eliminating the need for a union to attach the deactivated fused silica tubing to the analytical column. DuraGuard columns are fully deactivated and can be ordered and built-in, per the customer's specifications from J&W.

Installation hassles, peak shape problems and leaks associated with unions are history. Samples containing difficult analytes such as pesticides or drugs can be chromatographed without any undesirable contributions from the unions. DuraGuard columns are available for any polysiloxane or "low-bleed" stationary phase made with 0.18 mm I.D. or larger fused silica tubing.

Contact: Kim Newton
J&W Scientific
91 Blue Ravine Road, Folsom, CA 95630, USA
Phone: (+1-916)-9857888
Fax: (+1-916)-9851101
Website: www.jandw.com
circle number 28 on the reader reply card

CONFERENCES & SEMINARS

1-6 August 1999

Eleventh American Conference on Crystal Growth and Epitaxy

Venue: Tucson, Arizona, USA

Contact: T Gentile
ACCGE-11 Sec
P O Box 3233, Thousand Oaks
CA 91359-0233, USA
Fax: (+1-805)-4924062
Email: aacg@lafn.org

Web Site: www.aml.arizona.edu/aacg

2-6 August 1999

14th International Symposium on Plasma Chemistry

Venue: Prague, Czech Republic

Contact: Professor M Hrabovsky
Institute of Plasma Physics
Za Slovankou 3, P O Box 17, 182 21 Praha 8
Czech Republic
Tel: (+42-2)-824751
Fax: (+42-2)-8586389
Email: hrabov@ipp.cas.cz

4-13 August 1999

18th IUCr General Assembly and International Congress of Crystallography

Venue: Glasgow, Scotland, United Kingdom

Web Site: www.chem.gla.ac.uk/iucr99/

6-13 August 1999

Frontiers in Chemistry: Molecular Basis of the Life Sciences

Venue: Berlin, Germany

Contact: IUPAC Secretariat
Tel: (+1-919)-4858700
Fax: (+1-919)-4858706
Email: secretariat@iupac.org

7-13 August 1999

IUPAC General Assembly

Contact: IUPAC Secretariat
Tel: (+1-919)-4858700
Fax: (+1-919)-4858706
Email: secretariat@iupac.org

14-19 August 1999

IUPAC Congress

Venue: Berlin, Germany

Contact: Gesellschaft Deutscher Chemiker - GDCh
P O Box 90 04 40
60444 Frankfurt Am Main, Germany
Tel: (+49-69)-7917 358/360/366
Fax: (+49-69)-7917475
Email: tg@gdch.de

22-26 August 1999

ACS National Meeting: Block Copolymers - Designing Molecules for Applications

Venue: New Orleans, Louisiana, USA

Contact: Nikos Hadjichristidis
Department of Chemistry
University of Athens
Tel/Fax: (+30-1)-7249103
Email: nhadjich@atlas.uoa.gr

or Jimmy Mays, Department of Chemistry
Tel: (205)-9348101
Fax: (205)-9342543
Email: jmays@uab.edu

22-26 August 1999

218th ACS National Meeting: Optical Polymers - Advances in Optical Fibres and Wave Guides

Venue: New Orleans, USA

Contact: Associate Professor Julie P Harmon
Department of Chemistry
University of South Florida
Tel: (813)-9743397
Fax: (813)-9741733
Email: harmon@chuma.cas.usf.edu

or Dr Raja Mani
Optical Polymer Research
Tel: (352)-3781027
Fax: (352)-3737712
Email: maniraja@hotmail.com

26 August 1999

ACS Fall Meeting: Hydrogen Bonding for Macromolecular Self-Assembly

Venue: New Orleans, USA

Contact: Professor Andy Griffen
Chemistry and Biochemistry
University of Southern Mississippi
Tel: (601)-2664715
Fax: (601)-2665138
Email: anselm.griffen@gradsch.ccain.usm.edu

or Professor Dr Reimund Stadler
Macromolecular Chemistry II
University of Bayreuth/Building NW II
Tel: (+49-921)-553399
Fax: (+49-921)-553393
Email: stadler@akstadler.che.uni-bayreuth.de

22-27 August 1999

Flavour Release: Linking Experiments, Theory and Reality. A Joint American Chemical Society/Royal Society of Chemistry Symposium

Venue: New Orleans, Louisiana, USA

Contact: Andy Taylor
Tel: +44-115-9516144
Fax: +44-115-9516154
Email: andy.taylor@nottingham.ac.uk

31 August - 4 September 1999

Solid Phase Synthesis and Combinatorial Chemical Libraries

Venue: York, England, United Kingdom

Website: http://www.biocom.co.uk/york99.htm

CONFERENCES & SEMINARS

1-5 September 1999

The 5th International Symposium on Polymers for Advanced Technologies (PAT'99)

Venue: Tokyo, Japan

Contact: Secretariat, PAT'99-Tokyo
Waseda University, Tokyo, Japan
Tel: (+81-3)-52863120
Fax: (+81-3)-32054740
Email: oyaizu@mn.waseda.ac.jp

Website: www.rise.waseda.ac.jp/sympo/pat.html

1-30 September 1999

ECSOC-3 - 3rd Electronic Conference on Synthetic Organic Chemistry

Organised by Molecular Diversity Preservation International

Contact: Dr Esteban Pombo-Villar
ECSOC-3 Chairman
Preclinical Research, Novartis Pharma AG
CH-4002 Basel, Switzerland
Tel: (+41-61)-3249865
Fax: (+41-61)-3249794
Email: esteban.pombo@pharma.novartis.com

or Dr Shu-Kun Lin
ECSOC-3 Secretary
Molecular Diversity Preservation International
Saengergasse 24
CH-4054 Basel, Switzerland
Tel: (+41-79)-3223379
Fax: (+41-61)-3028918
Email: lin@mdpi.org

Website: http://www.mdpi.org/ecsoc-3.htm

5-9 September 1999

Macromolecules '99: Polymers in the New Millenium

Venue: Bath, England, United Kingdom

Contact: Dr A J Amass, Macromolecules '99
CEAC, Aston University, Aston Triangle
Birmingham B4 7ET, United Kingdom
Tel: (+44-121)-3593611
Fax: (+44-121)-3594094
Email: a.j.amass@aston.ac.uk

5-10 September 1999

31st Colloquium Spectroscopicum Internationale 1999

Venue: Ankara, Turkey

Contact: Professor Dr O Yavuz Ataman
Department of Chemistry
Middle East Technical University
TR-06531 Ankara, Turkey
Tel: (+90-312)-2103232
Fax: (+90-312)-2101280
Email: xxxicsi@rorqual.cc.metu.edu.tr

6-10 September 1999

1999 Royal Society of Chemistry Annual Conference

Venue: Heriot-Watt University, Edinburgh
Scotland, United Kingdom

Contact: Nicole Morgan
1999 RSC Annual Conference
Royal Society of Chemistry
Burlington House, London, England
United Kingdom, W1V 0BN
Fax: (+44-171)-7341227
Email: conferences@rsc.org

6-10 September 1999

8th International Symposium on Macromolecule-Metal Complexes (MMC-VIII)

Venue: Tokyo, Japan

Contact: Symposium Secretariat, MMC-8
Waseda University, Tokyo, Japan
Tel: (+81-3)-52863120
Fax: (+81-3)-32054740
Email: macro@mn.waseda.ac.jp

7-11 September 1999

Horizons of Organic and Organoelement Chemistry, to the Memory of Professor A N Nesmeyanov, on the 100th Anniversary of His Birth

Venue: Moscow, Russia

Contact: Professor Y N Bibnov, INEOS
Vavilov str. 28, Moscow
Tel: (+7-095)-1356165
Fax: (+7-095)-1355085
Email: dir@ineos.ac.ru

12-13 October 1999

Our Oceans - Highlight the Possibilities and Help Focus a National Thrust Towards the New Economic Frontier of the Oceans

Venue: Te Papa, Wellington, New Zealand

Contact: Email: j.lumsden@cae.canterbury.ac.nz

20-21 October 1999

8th New Zealand Coal Conference

Venue: Park Royal Hotel, Wellington, New Zealand

Contact: Conference Secretariat
Eighth New Zealand Coal Conference
P O Box 31-244, Lower Hutt, Wellington
Tel: (+64-4)-5703700
Fax: (+64-4)-5703701

6-10 November 1999

4th Congress of Toxicology in Developing Countries

Venue: Antalya, Turkey

Contact: Professor Semra Sardas
Gazi University
Faculty of Pharmacy Toxicology Department
TR 06330 Ankara Turkey
(+90-312)-2123009
Email: ek03-k@tr-net.net.tr

14-17 November 1999

Concepts and Needs for Dielectric Constant <0.15 mm Interconnect Materials: Now and the Next Millenium

Venue: Monterey, California, USA

Contact: Dr Kennth Carter
IBM Almaden Research Centre

Tel: (408)-9272617
Fax: (408)-9273310
Email: kcarter@almaden.ibm.com
or Dr Devendra Kumar, Novellus Systems
Tel: (408)-9534057
Fax: (408)-9433450
Email: devendra.kumar@novellus.com

17-19 November 1999
International Conference on Thermophysical Properties of Materials (TTPM99)
Venue: Singapore
Contact: Ms Goh Bee Dee/Ms Merlin Toh
Nanyang Technological University
Tel: (+65)-7994723
Fax: (+65)-7930997
Email: TPPM99@ntu.edu.sg
Website: www.ntu.edu.sg/sas/events/tppm99.html

21-24 November 1999
Eighth Asian Chemical Congress
Venue: Taipei International Convention Centre, Taiwan
Contact: Johnsee Lee
Chairman, Conference Organising Committee
The 8th Asian Chemical Congress
c/o Union Chemical Laboratories, ITRI
321 Kuang Fu Road, Section 2, Hsinchu, Taiwan
Tel: 886-3-5732004
Fax: 886-3-5732000
Email: 730023@ucl.itri.org.tw
Website: www.itri.org.tw/8ACC

21-24 November 1999
1999 NZIC Conference: Chemistry in New Zealand - A Showcase of Activities and Opportunities
Venue: Victoria University of Wellington, Wellington
Contact: Associate Professor Jim Johnston
Victoria University of Wellington
or Conference Office
School of Chemical and Physical Sciences
Victoria University of Wellington
Email: Margaret.Brown@vuw.ac.nz
Website: www.vuw.ac.nz/chemistry/nzic99

27 November - 2 December 1999
23rd RACI Australian Polymer Symposium
Venue: Geelong, Victoria, Australia
Contact: Associate Professor W D Cook
Department of Materials Engineering
Monash University
Clayton, VIC 3168, Australia
Tel: (+61-3)-99054926
Fax: (+61-3)-99054940
Email: wayne.cook@eng.monash.edu.au

13-17 December 1999
International Conference on Cleaner Production and Sustainable Development '99
Venue: Taipei International Convention Centre, Taipei
Taiwan, Republic of China
Contact: Dr Young Ku, Professor
Chairman of Academic Committee
Department of Chemical Engineering
National Taiwan University of
Science and Technology
43, Sec.4, Keelung Road, Taipei, Taiwan
Republic of China
Tel: (886-2-27376621)
Fax: (886-2-27376644)
Email: ku@ch.ntust.edu.tw

30 January - 4 February 2000
5th IUPAC Symposium on Bio-Organic Chemistry
Venue: New Delhi, India
Contact: Professor S Ranganathan
Biomolecular Research Unit
Regional Research Laboratory
Trivandrum 695 019, India
Tel: (+91-471)-491459
Fax: (+91-471)-490186

6-11 February 2000
RACI 11th National Convention
Venue: Canberra, ACT, Australia
Contact: Dr Graeme Moad
Molecular Science, CSIRO
Private Bag 10, Clayton South MDC
Clayton, VIC 3169, Australia
Tel: (+61-3)-95452509
Fax: (+61-3)-95452446
Email: graeme.moad@molsci.csiro.au

19-23 March 2000
Water 2000 Conference and Expo - "Guarding the Global Resource"
Venue: Auckland, New Zealand
Contact: New Zealand Water and Wastes Association
P O Box 13880
Onehunga, Auckland, New Zealand
Tel: (+64-9)-6363636
Fax: (+64-9)-6361234
Email: water@nzwwa.co.nz
Website: http://www.nzwwa.org.nz

22-25 March 2000
Chain Growth Polymerisation - New Chemistry for the New Millenium
Venue: Santa Rosa, California, USA
Contact: Professor Bruce Novak
University of Massachusetts
Tel: (413)-5452160
Fax: (413)-5450764
or Kris Matyjaszewski
Carnegie Mellon University
Department of Chemistry
Tel: (412)-2683209
Fax: (412)-2686897
Email: km3b@andrew.cmu.edu

CONFERENCES & SEMINARS

2-5 April 2000
Foods - Nutraceuticals - Confectionery - Beverages and Cosmetics
Venue: Doubletree Mission Valley Hotel, San Diego California, USA
Contact: Mr P C Hereld
Managing Director
The Hereld Organisation
200 Leeder Hill Drive
Hamden CT 06517, USA
Tel/Fax: +1-203-2816766

4-10 April 2000
10th International Conference on High Temperature Materials Chemistry
Venue: Aachen, Germany
Contact: Professor K Hilpert
Forschungszentrum Julich GmbH
Institut fur Werkstoffe der Energietechnik (IWE 1)
52425 Julich, Germany
Tel: (+49-2461)-613280
Fax: (+49-2461)-613699
Email: k.hilpert@fz-juelich.de

21-25 May 2000
10th International IUPAC Symposium on Mycotoxins and Phycotoxins
Venue: Sao Paulo, Brazil
Contact: Dr Myrna Sabino
Instituto Adolfa Lutz
AV Dr. Arnaldo 355
Sao Paulo, Brazil, 01246-902
Fax: (+455-11)-8533505
Email: myrna@sti.com.br

1-5 July 2000
13th International Conference on Organic Synthesis
Venue: Warsaw, Poland
Contact: Professor M Chmielewski
Institute of Organic Chemistry
Kasprzaka 44, 01-224 Warsaw 42
P O Box 58, Poland
Tel: (+48-22)-6318788
Fax: (+48-22)-6326681
Email: ichos@ichf.edu.pl

9-14 July 2000
38th International Symposium on Marcromolecules
Venue: Warsaw, Poland
Contact: Professor Stanislaw Penczek
Polish Academy of Sciences
ul. Sienkiewicza 112, 90363 Lodz, Poland
Tel: (+48-42)-6819815
Fax: (+48-42)-6847126
Email: spenczek@bilbo.cbmm.lodz.pl

9-14 July 2000
34th International Conference on Coordination Chemistry
Venue: Edinburgh, Scotland, United Kingdom
Contact: Professor P Tasker, Chairman
Dr John F Gibson, Secretary
The Royal Society of Chemistry
Burlington House, London W1V OBN
England, United Kingdom
Tel: (+44-171)-4403321
Fax: (+44-171)-7341227
Email: gibsonj@rsc.org

17-20 July 2000
40th Microsymposium on Polymers In Medicine
Venue: Prague, Czech Republic
Contact: Dr Jaromir Lukas
Institute of Macromolecular Chemistry
Academy of Sciences of the Czech Republic
Heyovskeho na. 2, 162 06 Praha 6
Czech Republic
Tel: (+420-2)-360341
Fax: (+420-2)-367981
Email: sympo@imc.cas.cz

6-11 August 2000
16th IUPAC Conference on Chemical Thermodynamics
Venue: Halifax, Nova Scotia, Canada
Contact: Dr Peter G Kusalik
Department of Chemistry
Dalhousie University
Halifax, Nova Scotia B3H 4J3, Canada
Tel: (+1-902)-4943627
Fax: (+1-902)-4941310
Email: kusalik@is.dal.ca

14-18 August 2000
12th International Conference on Thermal Analysis and Calorimetry
Venue: Copenhagen, Denmark
Contact: Dr O Toft Sorensen
Risoe National Laboratory
Fax: (+45)-46351173

20-25 August 2000
XIIIth International Congress on Rheology
Venue: Cambridge, England, United Kingdom
Contact: Dr D M Binding
Fax: (+45-1970)-622777
Email: rheology2000@aber.ac.uk

1 September 2000
22nd International Symposium on the Chemistry of Natural Products
Venue: Sao Paulo, Brazil
Contact: Dr M Fatima das G F da Silva
Universidade Federal de Sao Carlos
Depto. de Quimica, Via Washington Luiz
km 235, CP676, Sao Carlos, Brazil
Tel: (+55-16)-2748208
Fax: (+55-16)-2748350
Email: dmfs@power.ufscar.br

CONFERENCES & SEMINARS

3-8 September 2000
11th International Biotechnology Symposium
Venue: Berlin, Germany
Contact: Professor G Kreysa
DECHEMA eV
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8-10 November 2000
2nd International Symposium on Food Packaging - Ensuring the Safety and Quality of Food
Venue: Vienna, Australia
Contact: Dr L Contor
ILSI Europe, 83, Avenue E. Mounier, Box 6
B-1200, Brussels, Belgium
Tel: (+32-2)-7620044
Fax: (+32-2)-7710014
Email: laura@ilsieurope.be

3-8 December 2000
Soil 2000: 2nd Joint New Zealand and Australian Soil Science Societies Conference
Venue: Lincoln University, Canterbury
Contact: Helen Shrewsbury
P O Box 84, Lincoln University
Christchurch, New Zealand
Tel: (+64-3)-3252811 ext. 8955
Fax: (+64-3)-3253840
Email: shrewsbh@lincoln.ac.nz

9-13 December 2000
Poly Millenium 2000
Venue: Hilton Waikoloa Village, Waikoloa, Hawaii
Contact: William H Daly
Department of Chemistry
Louisiana State University
Email: bill.daly@chem.lsu.edu

14-19 December 2000
Pacifichem 2000
Venue: Waikiki, Honolulu, Hawaii
Contact: Professor B Halton
Department of Chemistry
Victoria University of Wellington
P O Box 600
Wellington, New Zealand
Fax: (+64-4)-4955241
Email: brian.halton@vuw.ac.nz

26 August - 1 September 2001
XXXIV International Congress of Physiological Sciences "From Molecule to Malody"
Venue: Christchurch, New Zealand
Contact: The Conference Company
P O Box 90-040, Auckland, New Zealand
Tel: (+64-9)-3601240
Fax: (+64-9)-3601242
Email: info@tcc.co.nz

International Chemistry Celebration 1999

The International Chemistry Celebration for 1999 is now well underway. In New Zealand, the celebration will focus on the week of 11-17 September 1999.

In addition to events that will be held locally (contact your local NZIC representative or the regional coordinator listed on the web site below), there will be a number of national events. The events will be coordinated with the assistance of the Science and Technology Promotion Programme of MoRST, FRST, HRC and RSNZ.

Details of all national events are available at the Chemistry Week Web Site (www.chem.canterbury.ac.nz/ichc.htm) or by contacting the national coordinator:
Dr Owen J Curnow
Department of Chemistry
University of Canterbury, Private Bag 4800, Christchurch
Email: o.curnow@chem.canterbury.ac.nz
Phone: (03) 3642819, Fax: (03) 3642110

The major international focus is on polymers, probably the most important new class of materials that chemists have produced this century, and there is an international program entitled "A World of Colour: An International Search for Natural Dyes" in which young people will be encouraged to investigate indigenous natural dyes.

Other programs and events are:

(i) A competition for Form 1-4 students to use their natural dyes, found using the "World of Color" program, and create a new National flag.

(ii) The national short story competition will be run again this year with sponsorship from Baldwin Shelston Waters. See the Chemistry Week web site for details and last year's winning stories.

(iii) A National Chemistry Challenge for 6th and 7th formers will involve regional competitions throughout New Zealand with a final in Wellington during Chemistry Week.

(iv) A crystal growing competition is being organised by Dr Bill Henderson (University of Waikato).

(v) David Katz and John Nicholson will be touring New Zealand after the CHEM ED 99 conference and will be speaking on "The Chemistry of Toys" and "Chemistry into the Community", respectively.

(vi) Local activities! Some of the activities in Canterbury, for example, will be a colourimetry competition and a "Crazy Chemistry Show".

Orbituaries

JOHN POLLARD
HON. FNZIC, (1923-1999)

Former President and Honorary Fellow John Pollard died recently in Christchurch.

John was born in Christchurch in 1923 and was educated at Christchurch East School, Christchurch Boys' High School, and Canterbury University College where he graduated BSc, Diploma of Industrial Chemistry. He was one of a group of four students in only the second year of this diploma which had begun under Stan Siemon in 1944. He joined the then Dominion Laboratory as Assistant Chemical Engineer working on fuel technology and designing a drying plant for the tobacco industry. He then returned to Christchurch as Engineer for New Zealand Plywoods before joining the Christchurch Gas Company as Production Chemist. He became Chief Chemist in 1956. In 1960 he took up the position of Technical Services Engineer with British Pavements Ltd. When he retired from that position in 1983 he was appointed Director of the Consumers' Institute laboratory in Christchurch in 1984. He retired for a second time in 1988. At that time the Consumer laboratory was in the process of being absorbed in to the DSIR's Southern Region Industrial Development Department. John records that "it fell appropriately to my lot to close the door on the 1965 laboratory my father had founded on his retirement".

John Pollard and the only remaining gas street lamp in Christchurch, outside the Canterbury Club in Cambridge Terrace, 1986.

During this period he wrote "Requiem for a Gasworks" - a history of the Christchurch Gas Company. This is a seminal work in the history of New Zealand industry. Among technical histories I know of no other book quite like it. It stands out for the quality of its writing and for its production standards.

Following his second retirement in 1988 John became increasingly involved with consulting for the Bitumen Contractors' Association. This led to his writing a joint Taranaki Polytech-Bitumen Association lecture series on bitumen safety. He was principal presenter of this series which continued until 1998 and included lecturing to Australian bitumen contractors. His great skills as a lecturer and demonstrator were well displayed in this series.

John was active in the Institution of Professional Engineers of New Zealand and was the prime mover in the formation of its Chemical Engineering Technical Group. This has now developed into the Society of Chemical Engineers New Zealand. He was also deeply involved with the New Zealand Institute of Chemistry at both branch and national levels, being elected President in 1975. When John was Convenor of the List of Members Committee in pre-computer days, I remember sitting around his large kitchen table with a group of volunteers sorting duplicate sets of cards of members' details preparing them for the printer. It is a tribute to John's standing in the chemistry and engineering professions that he was asked to serve on a large number of committees. Among them the Clean Air Council, the TELARC Council, and the Pavements Committee of the Roads Research Unit. He had been a member of the Engineering Faculty of the University of Canterbury since 1970.

This bare outline of John's career conveys little of the special Pollard character. He had an encyclopaedic general knowledge and a great love of both science and engineering. He was extremely well read in these and other areas - his knowledge of the bible for example was impressive. His interest in the history of engineering led to his appointment as Chairman of the IPENZ National Committee for Engineering Heritage.

John really enjoyed his industrial chemistry, particularly the daily challenges of running an industrial plant, and he claimed to "relish the sins of industry". My contact with John began when he joined the Christchurch Gas Company. His job was to produce towns gas complying with the prescribed standards - mine was to carry out the official tests to see that it did. We were on opposite sides of the industry/government interface, but it was a very amicable, professional relationship. This relationship continued when John moved to British Pavements. He need water quality data to help with the formulation of road-market materials and Chemistry Division analysed many water samples. John would approach us for an analysis and, in the way that was then possible, we would fit the analysis in with the many others we were doing. At Christmas time in the first year of this arrangement, John arrived one morning-tea time with a splendidly iced Christmas cake. He continued this practice for many years and joked that he enjoyed the opportunity to bribe the civil service.

John was a man of many talents and he gave freely of them to the Institute of Chemistry, (most recently by joining the editorial committee for *ChemNZ*), to IPENZ and to many other organisations and has contributed two chapters to the forthcoming publication on chemical milestones in New Zealand history. He was deeply knowledgeable in many fields and had a wonderful way with words - his many letters to the editor of the Christchurch Press were always a delight. John was a willing volunteer for the Institute whether it was writing, lecturing, or organising. He was a very supportive friend to many and will be greatly missed. He is survived by his wife Biddy, daughters Penny and Joanna, son Robin, and six grandchildren.

It is often said of the recently deceased that we will not see their like again. I believe these are not merely token words when applied to John Scott Pollard.

Denis Hogan

DR BRIAN SHORLAND
DSC(NZ), HON. FNZIC, (1910-1999)

It is with great sadness that I inform you that Dr Brian Shorland passed away in his sleep on Monday 7 June 1999. He was aged 89.

Brian devoted his professional life to scientific research in biochemistry with particular emphasis on nutrition. He worked in the Dominion Fats Laboratory, DSIR and was the Director for a number of years before he retired. Following retirement in 1970 he took up an Honorary Lectureship in Biochemistry and later was an Honorary Fellow in the School of Biological Sciences. He was an active researcher and promoter of science right up until his death. His substantial contribution to his field of research has been recognised by the awarding of a DSc from Victoria University.

For the past 29 years the University has benefited from his productive research and his wider contribution to service in New Zealand.

Jim Johnston
Acting Dean of Science, Victoria University of Wellington

INORGANIC CHEMISTRY AWARD

The 17th Inorganic Award of the RACI is to be presented at the next meeting of the Inorganic Chemistry Division, as part of the 11th RACI Convention, to be held in Canberra, 6-11th February 2000. The Award winner will deliver the G J Burrows Lecture at the Conference.

The award is to be based on consideration of the candidate's scientific work published in the past 10 years, together with other evidence of his or her standing in the international community. A major portion of the relevant scientific work must have been carried out in Australia and/or New Zealand.

Candidates, who must be financial members of the Institute or of the NZIC at the time of nomination, may apply personally or be nominated by other members of the Institute. Proposals should contain the following information: a brief curriculum vitae; a list of publications for the past 10 years (1989 to the time of the nomination) for which there has been a significant contribution to the field of inorganic chemistry; reprints of no more than 10 of the most significant of these publications; and any supporting information that could be helpful to the selection committee. Nominees should also arrange for two independent testimonials to be forwarded to the Division Chairperson.

The Award will consist of a citation, an honorarium of $300, expenses associated with attendance at the Conference and a metal sculpture. Nominations should be forwarded to the Division Chairperson, Professor Colin L Raston, Department of Chemistry, Monash University, Clayton, Victoria 3168, Australia by 1st October 1999.

NEW ZEALAND INSTITUTE OF CHEMISTRY

FELLOWSHIP AWARDED TO ERIC W AINSCOUGH

Eric joined what was then the Chemistry and Biochemistry Department at Massey University in 1971 as a lecturer, having completed two and a half years performing post-doctoral work in Canada and England. He obtained his PhD from the University of Queensland in 1968. He is now Associate Professor of Chemistry in the new Institute of Fundamental Sciences at Massey University.

His research activities include copper promoted reactions of coordinated ligands containing sulfur atoms; biomodelling of active sites in proteins; spectroscopic studies on proteins such as lactoferrin and azurin; aspects of the chemistry of Os_3CO_{12}; chemistry of new ligand systems containing phosphorus and nitrogen atoms and the chemistry of cyclophosphazenes. He has collaborated with many colleagues and students on these projects. He also has interests in chemical education.

He has published widely and given presentations nationally and internationally.

BRANCH NEWS

WAIKATO

The Waikato Branch of NZIC has had another active month beginning with the highly successful analytical chemistry competition. Brian Nicholson, the Co-ordinator of the competition filed the following report.

Following on from the success of the 1998 competition, it was decided to hold another contest this year along the same lines. Invitations were sent to schools in the Waikato/Bay of Plenty region to send teams of four students to the University for the day to carry out an analysis. A total of 20 schools involving 80 students in all entered this year. The task was to analyse for Pb^{2+} in a sample using both a gravimetric and a volumetric back-titration method. The results were very impressive and judging as always was very difficult. Most of the students achieved

results that would rank alongside those expected of good first-year University student.

The following prizes were awarded:
1st Prize to St Johns College (Matthew Blackmore, Oliver Schurmann, Philip Wahrlich and Daniel Van de Pas)
2nd Prize to St Peters School (Craig Fisher, Melanie Rouse, Kimberley Kells and Matthew Wansbone)
3rd Prize St Pauls Collegiate (Caleb Ward, Richard Faville, Stacey Scott and Fiona McBryde)
4th Prize Tokoroa High School (Elizabeth Stockman, Danae Bernard, Elizabeth Flavall, Bernardo Abreu).

Highly commended were the teams from Hamilton Girls High School, Trident High School and Hillcrest High School. Numerous people contributed to the success of the occasion. Annie Barker, Jenny Chapman and Natalie Curnow of the Chemistry Department, University of Waikato for setting up the laboratories, Michele Prinsep for designing participation and prize certificates, Lyndsay Main, Michele Prinsep and Richard Coll for supervising the laboratories, Tui Doak, Bryant Halls for excellent lunches. All important financial support is acknowledged with thanks. Hill Laboratories for generously sponsoring the prizes, the NZIC local branch for funding the lunches, and the Chemistry Department, University of Waikato for providing the laboratory facilities. Overall the competition enabled keen 7th form chemists to spend a day in the University laboratories and mix with peers from other schools, and provided an opportunity for the teachers who accompanied the students to meet each other and with University chemists. It was therefore an effective publicity occasion for both the NZIC and for the University.

This year it was the Waikato's turn to host the ChemEd Conference for secondary school chemistry teachers. There was an outstanding turn out of 168 registrations, and participants from the North Cape to Bluff (well school's near them anyway). The conference had a tremendously convivial atmosphere, and was kicked off in grand style with a Plenary lecture by Sr Mary Virginia Orna Director of Educational Services at the Chemical Heritage Foundation and Professor of Chemistry at the College of New Rochelle. Sr Orna presented a seminar on "The Shroud of Turin and other Mysteries". Sr Orna proved an inspirational speaker, and in addition contributed to a number of workshops during the conference. Other international speakers include Professor David Katz who entertained everyone with his topic "Chemistry in the Toy Store" accompanied by some dramatic demonstrations, and John Nicholson from the University of East Anglia. John spoke about the Science Starter Program which involved taking chemistry to the public including teaching chemistry in pubs and market places. Local plenary speakers included Nick Kim who described advances in forensic chemistry, Tom Higham from Waikato's Carbon-Dating Laboratory, who described the use of carbon dating to answer the question of when New Zealand's first humans arrived, and Malcom Carr , recently retired Director of Waikato's Centre for Science Mathematics & Technology Education, who reflected on the topic of Chemistry in Context. The speakers were supplemented by a variety of workshops on such diverse topics as, using the internet for environmental education, building your

own calorimeter, and pedagogical content knowledge. Delegates also had the opportunity to go on site visits to chemical industries and a geochemistry field trip. Other highlights included a plenary lecture and subsequent demonstration of pyrotechnics by Waikato graduate Martin Van Tiel, owner of Van Tiel Pyrotechnics; just when the ducks at the University lakes thought it was safe at the end of the duck shooting season. The delegates also tried their hand or minds at the adult version of the Waikato's successful ChemQuest; a mastermind style chemistry quiz usually reserved for sixth formers. It must be said that the sixth-formers were better behaved.

University of Waikato news centres around departures. Ted Christiansen, working for Merilyn Manley-Harris left on the 20th July, returning to the University of Montana to defend his PhD thesis. Ted is staying in the US to remodel his house before getting a job (hopefully). Also departing is Buck Rogers who worked for Michael Mucalo. Buck is taking up a full-time position with the NZDRI. We wish Buck and Ted and family all the best for the future.

Richard Coll

MANAWATU

Associate Professor George Clark gave the Presidential Address "Serendipity & the Research Chemist" to the Branch at The Science Centre and Manawatu Museum in Palmerston North on Tuesday evening, 11 May 1999. Before he did so there were two items of business. The first was a SGM to approve the Minutes of the 1997 Manawatu Branch AGM (carried unanimously in 30 seconds flat!), and the second was the presentation by the President to Associate Professor Eric Ainscough of the award of a NZIC Fellowship. In his talk George Clark presented a brief overview of Council planning for forthcoming NZIC activities, and a report on the April Council Meeting. He then went on to reflect on serendipitous discoveries in chemistry, which have had a beneficial effect on society and the way we live. He drew on a few examples of chance discoveries from his own recent research. He pointed out that the Government is proposing major changes to the mechanism of funding of research in New Zealand. When these changes are implemented, what opportunities will there be for serendipitous discoveries in the future? George pointed out that the meaning of serendipity was an unexpected discovery by accident, but it had been shown that a prepared mind was very helpful in coming across these unexpected discoveries. George mentioned the discovery by Watson and Crick of the structure of DNA as a "pseudoserendipity" where they were actually trying to find the structure and found it by a set of fortunate circumstances. A truly serendipitous discovery was that by Professor Robert Curli who discovered buckminsterfullerene (C60) when he had been looking at ways of making outer-space carbon molecules. George himself had been fortunate to be involved in serendipitous discoveries in his own crystallographic research, particularly with structures of systems where drugs are binding to DNA. One of the unexpected outcomes was the first discovery of a 3-dimensional DNA crystal.

The Branch had a Mid-Winter party for members and their partners in the form of a Wine Options Game evening on Tuesday 22 June at The Science Centre and Manawatu Museum in Palmerston North. It was a multi-faceted, fun quiz evening exploring the chemistry of wine. Grant Boston and Justin Bendall acted as Masters of Ceremonies, Grant asking the questions of the wines, and Justin interspersing the tastings with erudite chemical comment. The Game participants formed teams and tasted (accompanied by cheese and biscuits) a total of six wines, four whites (a Gewertztraminer and three of Chardonnays) and two reds (a Pinotage and a Cabernet/Merlot. They answered four multi-choice questions about each wine (wine type, year of production, country of origin, region of country). The six wines were all from New Zealand, and as Grant said, showed what a good range in wine varieties was now made in New Zealand. During the tastings and question answering Justin described with the aid of overheads the various chemical characteristics or features of wines, and covered topics such as the presence of terpenes at ppt concentrations which provide various flavours to wine, major acids in wines (e.g., tartaric, malic, succinic, citric), esters in wine that accumulate with age or diminish with age, the release into wines of chemicals (oak lactone, furans) from oaking in toasted barrels, spicy flavours in wine (e.g., cinnamic acid esters), and sulfur compounds in cabernet sauvignon (some of which at very low levels, 5-15 ppt, are important for fruity flavours).

Dr John Nicholson, University of East Anglia, Norwich, UK spoke to the Branch on "Chemistry into the Community" at The Science Centre and Manawatu Museum in Palmerston North on Thursday evening, 1 July 1999. This was a joint meeting of the Branch and the Science Centre and advertised as a public lecture because of its general interest. John started his talk provocatively by suggesting that promotion of chemistry should be in everyone's job description. He referred to a number of "institutional truths" for the discipline of chemistry that included "people need chemistry to survive in the modern world", "chemistry is all around us, an integral part of our environment", and the one this writer particularly liked "chemists need the public to understand them and their discipline". John went on to review different ways in which chemistry has been taken into the community with the aim of making it enjoyable and rewarding. These ways included contributions to National Science Week, agricultural shows, local radio, an outreach Science Starter, and START - Science and Technology through ART (funded with the aid of a small lottery award). A good example of the START programme was a 2-day course on paint, its chemistry and history. This involved participants in one day on the chemistry of cave paint, tempura, and casein-based paints, followed by one day on applied art. John used video clips to illustrate this and other community-based projects. He discussed what approaches had worked, what had not worked and why. John urged practising chemists to try some of the informal ways that he had enthusiastically demonstrated for promoting the understanding of chemistry and chemists.

MASSEY UNIVERSITY

Congratulations to Branch members Professor Tony Burrell and Associate Professor David Officer, Institute of Fundamental Sciences - Chemistry. Tony has been selected to receive one of the four first-ever JPP Young Investigator Awards on Porphyrin and Phthalocyanine Chemistry. These awards are sponsored by John Wiley & Sons. This award is additional to a number of awards that Tony has received over the last year or so. David Officer has received fitting recognition of his scientific

contributions to the porphyrin research programme by being promoted to the position of Associate Professor within the Institute.

Branch member Professor Sylvia Rumball, ONZM, Assistant to the Vice-Chancellor Equity and Education, Director of the Science Policy and Education Unit at Massey University and a member of the New Zealand National Commission for UNESCO was part of a delegation of nine New Zealand scientists, science managers and policy makers attending the UNESCO/ICSU (International Council for Science) World Science Conference which got underway in Budapest, Hungary on Saturday 26th June. Over 2000 people from around the world attended what is the first global conference on science in 20 years. The conference, entitled 'Science for the 21st Century - a new commitment', examined future directions for scientific research and the many interfaces between science and society. It also aimed to look at issues related to increasing the commitment of governments and policy makers to the basic and long-term scientific research which is vital for the development of society in the next century. A particular objective of the New Zealand delegation was to call on UNESCO to encourage wider participation of women and indigenous people in science. At a local level, the New Zealand National Commission for UNESCO hoped to follow up the conference by facilitating a forum examining New Zealand's international science linkages.

Harry Percival

WELLINGTON

Associate Professor George Clark of the University of Auckland delivered his Presidential Address to a capacity audience at the IRL Training Centre, Gracefield on 18 May. The theme of the lecture was Serendipity and the Research Chemist, and George began by describing some of the important discoveries in chemistry which came about by accident. The main point was not that great discoveries were often accidental but that it required a researcher with a good understanding of the subject to appreciate the significance of an accidntal or unexpected result. More than that, successful exploitation of serendipitous discoveries required that the researcher had sufficient working flexibility to be able to follow up the initial observations. George went on to describe how serendipity had played a part in his own research into the structural chemistry of DNA but returned to the more general theme towards the end of his talk when he commented on the scope for serendipitous breakthroughs in a highly regimented, output-oriented research culture. The talk was followed by a lively discussion.

In June the Wellington branch joined the Australasian Corrosion association for a visit to the BRANZ laboratories at Judgeford. Corrosion Scientist, Chris Kane, showed the group an accelerated weathering chamber and described studies on timber priming systems and on atmospheric corrosion of steel in different parts of New Zealand. He then took the group to see facilities used to test building components for fire resistance and thermal and seismic performance. Another reminder of the technologies behind today's built environment which we tend to take for granted.

Rod Tilbury

OTAGO

BRANCH PROGRAMME

The 1999 Otago Branch Programme opened on March 4 1999 with an excellent dinner at the Mellor restaurant of the Otago Polytechnic. The after dinner speaker, introduced by Professor Arthur Campbell, was the current Joseph Mellor Professor of Chemistry and former Head of the Chemistry Department at the University of Otago, Brian Robinson. His topic, appropriate to the location and his position was "Joseph Mellor and Chemistry". Brian begun by telling us how Otago Polytechnic in its collective wisdom decided "Poly-Filla" was not a suitable name for their August eating establishment but that it should be named for the most famous product of technical education in Dunedin, Joseph William Mellor. Judging by the standard of the cuisine on the night, the restaurant lives up to the reputation of its namesake and like him deserves to be better known.

JOSEPH MELLOR

Joseph Mellor was born in Huddersfield in 1869 and moved to Dunedin in 1881. He began his working life as a boot-finisher and was then employed by Harry Fish MP, one time Mayor of Dunedin. He had a prodigious memory and a tremendous capacity for hard work which led him to become very studious and bookish. He even had a laboratory at the bottom of the yard of his home where in the cold Dunedin winters his doting mother would bring him a heated brick and a sock to keep him warm while he worked. In 1889 he began his studies in chemistry at the King Edward Technical College. His first publication, reflecting his lifelong views on the subject of the demon drink was entitled "Gooseberry wine as a temperance drink". He graduated in 1892 and won a scholarship to the University from which he obtained a BSc with first class honours in 1896. It is interesting to reflect on the colonial status of New Zealand at the time which required that the exam papers sat by Mellor should be sent to England for marking. On the way the ship carrying the papers sank and Mellor had to sit the exams all over again!!

After graduation Mellor became a Lecturer at Lincoln Agricultural College where he noted that "lots of fellows are not very intelligent" and acquired the belief, common at the time, that intelligence is all in the shape of the head. He moved to England in 1897 and obtained his doctorate in 1902 at Owens College, Manchester. After a short period of school teaching, he moved to the Ceramics Association in Shropshire and began the great work on ceramics that led to his most notable contribution, the development of a refractory surface for blast furnaces. He became world famous as "Mr Ceramics" and proceeded to write an enormous number of books, the best known of which is the 16 volume series entitled "Comprehensive Treatise on Inorganic and Theoretical Chemistry". As an indication of Mellor's dedication, each of these volumes contains some one million words and every volume was written free-hand by Mellor himself. Mellor was awarded the FRS in 1927 and in 1937 he was knighted. He was elected to the council of Imperial College in 1938 and died in the same year. It is clear

he was an outspoken man who upset the scientific elite of his time causing them to withhold recognition which then came late and somewhat begrudgingly. Even Ernest Rutherford was moved to comment that he had hoped that Mellor's work "would receive more public recognition".

Mellor was survived by his wife and lifelong companion Emma who shared with him (and other contemporaries like Sir Arthur Conan-Doyle) a belief in mysticism and the occult. In fact when Emmy (as he called her) set up the Mellor fund in 1948 with money from Mellor's estate, she demanded that the University should also believe in the occult and that Council should hold a séance to decide how the money should be used. Joe dutifully appeared at this séance and bequeathed that the fund should be "solely for the purpose of research in pure chemistry" and should go to the Chemistry Department. (There is no truth to the rumour that while Head of Department, Brian required staff to join hands during Chemistry Department meetings!). With additional money added over the years, prizes, scholarships and the Mellor Professorship have been established. Hugh Parton, Ted Corbett, Arthur Campbell, Dave Buckingham and Brian himself on two occasions, have held the Professorship and collectively have ensured that inorganic chemistry has flourished at the University of Otago.

Professor Brian Robinson

Besides being a prolific writer, Mellor was also an accomplished cartoonist and social commentator of his time. Many of his views were expressed in an amusing and irreverent column called "Uncle Joe's Nonsense" that was compiled by the Ceramics Society in 1934. In the examples provided by Brian was one classic in which Joe bemoans the "very gentle manner" in which rugby is played now "compared with the rough and tumble way it was played in my time in New Zealand". Joe goes on to say that in the old days if you indignantly said to a player, "What do you mean, sir, by tackling me, I do not have the ball!" you would get the answer "That's alright, my dear laddie! You would have had it if I hadn't nabbed you". The vote of thanks for Brian's talk, given by Professor Keith Hunter, reflected the appreciation of the Branch at being treated to such a well-researched commentary on the life of a man of such importance to chemistry at Otago.

CHEMISTRY DEPARTMENT NEWS

Two members of the Chemistry Department are to be congratulated on being awarded Marsden grants this year. The first recipient is the Branch Secretary, Dr Kate McGrath who received $300,000 over three years to investigate "Understanding and replicating Nature's production of sea shells, bones and teeth". Working with Kate are Dr Mike Barker (Marine Science), Dr Sigurd Wilbanks and Dr Craig Marshall (Biochemistry), Callum MacKenzie (research assistant) and Frank Yuanfang (PhD student). Kate describes the thrust of their work as follows:

The natural world offers a plethora of materials, which have complex and intriguing structures: bones, teeth, shells and clays are just a few examples. Attributes of these materials are due to the specific combination of the integral constituents. Broadly one may speak of these materials as inorganic/organic composites. Such materials are simultaneously strong, tough and hard. How does Nature fabricate materials in such diversity? The answer to this is unknown. Our research aims to elucidate the mechanism for their formation and also to develop methods for their synthesis.

Sea urchins display a variety of geometries for their endo and exoskeletal forms. In all forms the calcite is present as a single crystal but is devoid of specific facets or sharp edges. This is in striking contrast to calcite grown in the absence of organic material. In addition the various skeletal forms display a strong correlation to the liquid crystal phases formed in lyotropic surfactant systems. A native New Zealand sea urchin is being investigated to determine the mechanism of formation of its skeleton, the specific proteins, glycoproteins and other organic matrix molecules involved in the growth and the interactions that control the final form of the inorganic material.

In parallel to this study, lyotropic liquid crystalline phases are being used as model organic matrices to stimulate and manipulate growth of added inorganic precursors (primarily, calcium carbonate and phosphate). As the problem unfolds in the study of the sea urchins, specific aspects found to contribute in the natural system will be incorporated in the synthetic system. By pulling these two branches together an understanding of the important controlling features in material formation will be revealed leading to the synthesis of novel materials with specific properties.

The second recipient is Professor Brian Robinson who with Dr Keith Gordon and Dr Henrik Kjaergaard received $300,000 for a project aimed at understanding the physical processes which govern array energy transfer brought about by photochemical/ or electrochemical stimuli. The research will involve building arrays, including 'molecular boxes' which incorporate polyaromatics as photophores and ferrocene or metal fragments as electrophores. Previous work has given a detailed understanding of the electronic properties of the individual components, and the physical properties of the coupled systems will be studied by electrochemical laser and acoustic spectroscopy. Joy Kerr has been appointed as the Research Fellow and a PhD student is being sought. Part of the work is in collaboration with Professor Tony Manning (Dublin).

PHARMACY DEPARTMENT NEWS

An ex-Chairman of the Local Branch, Dr Rob Ledger, has recently returned from eight months of sabbatical leave in Europe. Initially based in the Gorlaeus Laboratories, Amsterdam Centre for Drug Research at the University of Leiden, Netherlands, Rob worked on the application of liquid chromatography-mass spectrometry (LC-MS) to the chiral analysis of the widely used local anaesthetic bupivacaine and

its metabolites in humans. He used collision-induced ionisation (LC-MS-MS) to reveal that in humans receiving long-term epidural infusions of bupivacaine in the post-operative setting there are at least 18 oxygenated metabolites of bupivacaine excreted into the urine, many of which were previously unknown. Rob was able to appreciate first hand why LC-MS is the tool of choice for analysis in the pharmaceutical industry and for pharmacokinetic and metabolism studies. There is clearly a need for gaining access to this high powered technology at the University of Otago if we are not to be left behind.

Rob them moved to the Pharmacy Consortium for Computer Aided Learning (PCCAL International) in the Department of Pharmacy and Pharmacology at the University of Bath, United Kingdom, to study and develop computer aided learning packages for use in pharmacy education. He was particularly impressed with the seven packages on the theme of "Drug Targets and Transduction Mechanisms" developed by PharmaCALogy which are now being used in the School of Pharmacy at Otago. He also worked on developing and programming a module on psoriasis to form a generic template for other modules in a package on dermatology. The package will assist pharmacy students to learn the clinical principles of some of the more common skin disorders namely, psoriasis, eczema, acne, impetigo, scabies, and tinea. Rob hopes that useful collaborative developments will eventuate through the active association he has formed between Otago School of Pharmacy and PCCAL.

PRESIDENTS VISIT

The visit by our President, Associate Professor George Clark, on May 4 was an opportunity to appreciate the importance of "Serendipity and the Research Chemist". He pointed out that the new knowledge is not generated in a "linear" way, as for example, that Rutherford led to Bohr which led to the atomic bomb but that it can appear serendipitously. Thus we should always be mindful of Hugh Walpole's "Three Princes of Serendip" (1754) who "were always making discoveries by accidents and sagacity of things which they were not in quest of". George went on to define a new word "pseudoserendipity" to describe the accidental discoveries that emerge during a quest i.e. the "accidental discoveries of ways to achieve an end sought for". This is the serendipity described by Pasteur in his famous dictim - "*Dans les champs de l'observation, le hasard ne favories que les esprits prepares*".

After pointing out the importance of something as simple as keto-enol tautomerism to the discovery of the alpha-helix, George gave us an insight into his own work in x-ray crystallography. In describing his work on DNA minor groove binding drugs, he gave an example of how a "cascade of serendipitous events" led to the discovery that DNA can breathe and allow a drug in the DNA groove to take up a new orientation. It was fascinating to realise that seemingly arcane events like using araldite instead of wax or leaving something in the dark can lead to important discoveries. George was finally driven to speculate whether all the recent effort by Government to introduce managed research through the Foresight project could in fact be counter-productive in leading to the loss of one of the most important processes of scientific endeavour.

In regard to NZIC matters, George was thanked by the Otago Branch for facilitating the award of a grant to support the visit of the renowned biochemist Professor Alex Glazer of Berkeley, California. Professor Glazer is coming to New Zealand for two weeks in November when he will give public lectures and scientific talks related to "Genome Sequencing". Addresses will take place in Dunedin, Auckland and another main centre but could occur in smaller centres if Branches help with billeting and internal travel costs. Interested parties should get in touch with Kate McGrath.

POSTER COMPETITION

The annual post-graduate student poster competition was held on Wednesday 23 June 1999 and involved about 20 entries from University of Otago students. The three judges were Emeritus Professor Dick Laverty, ex-Head of Department, Pharmacology, Professor Merv Smith, ex-Head of Department, Biochemistry, and Dr Helen Palmer, Post-Doctoral Fellow in the Department of Chemistry. The winner of the $200 Travel Prize for best poster from an NZIC member was Julia Turnbull of Chemistry for a poster entitled "Mixed-ligand thioether complexes of ruthenium (II)". First, second and third prizes respectively went to Tony Davidson, Chemistry for "Thiolate containing macrocycles", Isobel Franklin, Biochemistry for "ER calcium pump is up-regulated in calcium transporting enamel cells" and Joy Kerr, Chemistry for "Water-soluble mu3-carbyne clusters as sensors". The prize for the most aesthetically pleasing poster went to Rachel Fleming, Biochemistry for "Lactate dehydrogenase from Antarctic and temperate fish". Spot prizes of chocolates were drawn by Professor Jim Simpson, Head of Department, Chemistry who had the gall to draw his own ticket first! The meeting was enjoyed by all thanks to the superb organisation of Kate McGrath.

Paul Fawcett

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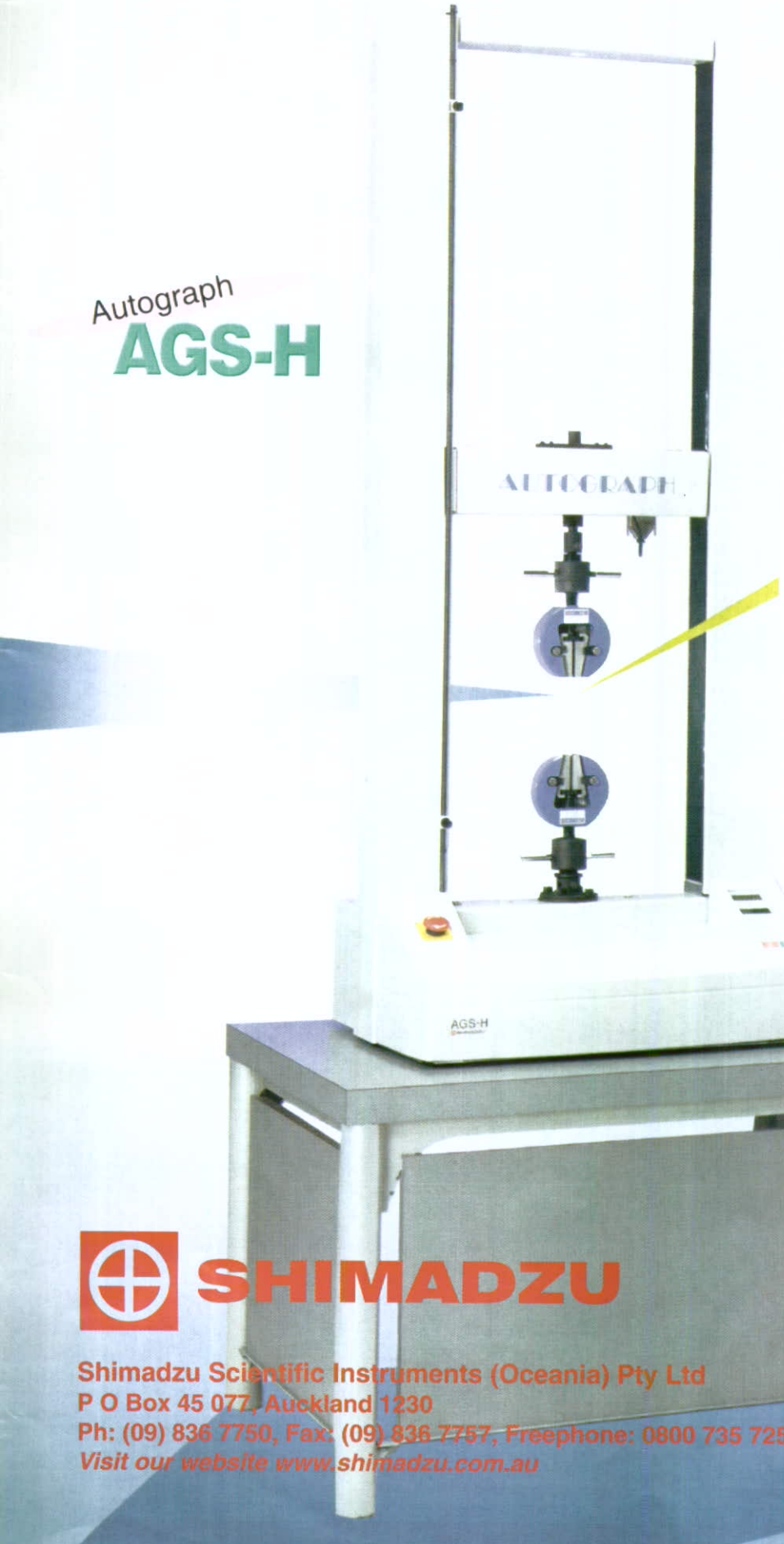

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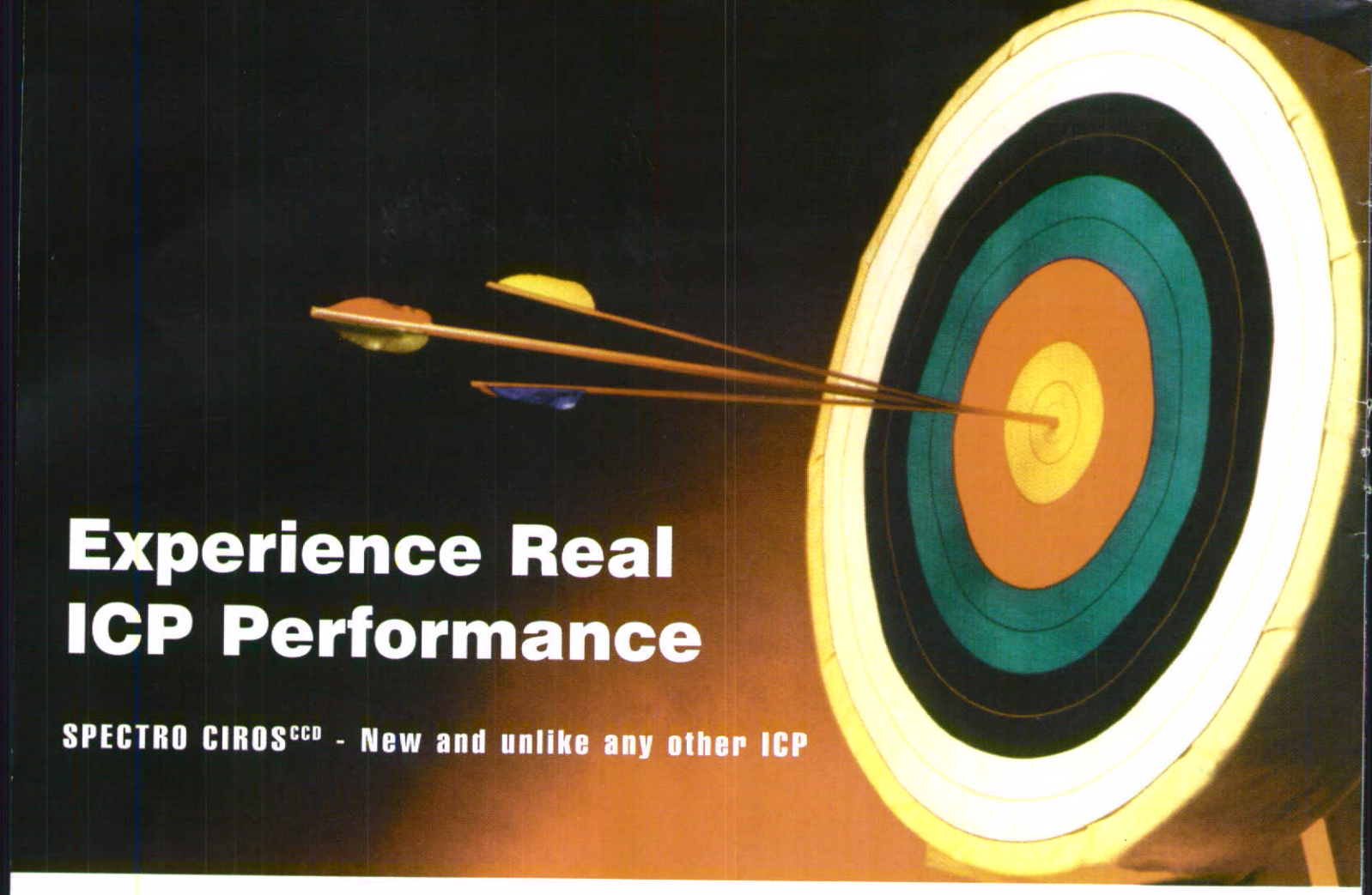

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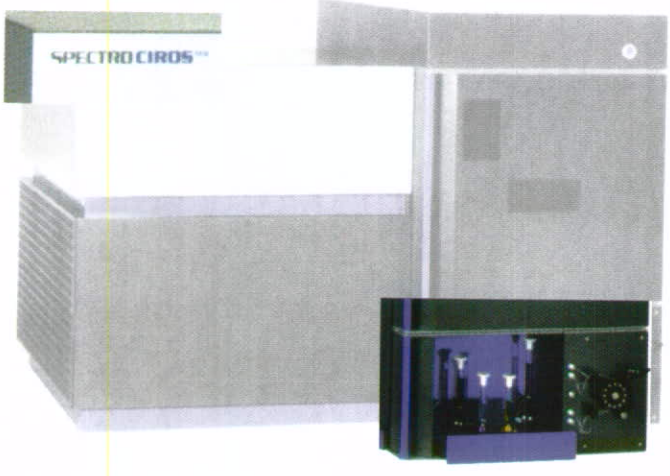

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Chemistry in New Zealand - a Showcase of Activities and Opportunities

A VUW Centennial Event

2nd Circular and Registration

November 21 - November 24

School of Chemical and Physical Sciences
Victoria University of Wellington, P O Box 600, Wellington, New Zealand

Venue

The conference is being held at Victoria University of Wellington and is part of the VUW Centennial celebrations. The oral and poster sessions will be held in the Maclaurin Lecture Theatre Complex. A map of the VUW Campus will be sent to all registrants.

Scientific Programme

NZIC99 is open to all disciplines of chemistry. The papers will be allocated to specialist sessions once the abstracts are received. Three parallel sessions already organised are:

International Carbohydrate Symposium

An international carbohydrate symposium featuring invited speakers will run as one of the specialist sessions on Wednesday 24th. The symposium is in honour of Emeritus Professor Robin Ferrier. Information on this symposium will be circulated as part of the NZIC99 material. Specific questions can be addressed to Dr Richard Furneaux by email at: r.furneaux@irl.cri.nz

Natural Products Workshop

The third NZ Natural Products Workshop will be run as one of the parallel specialist sessions on Monday and Tuesday, and will feature sessions on polysaccharide chemistry and biologically active compounds. For more information contact Dr Stephen Bloor at IRL, email: s.bloor@irl.cri.nz

Emulsion Polymer Workshop

A workshop featuring speakers from FRI, University of Sydney, Canterbury and Auckland Universities will also run as one of the parallel sessions on Wednesday 24th. Abstracts for this workshop are also invited. Contact Dr Robert Franich at FRI, email: r.franich@fri.cri.nz

NZIC99 Plenary Lecturers

Professor Ronald Breslow - Samuel Latham Mitchell Professor of Chemistry at the University of Columbia, NY, USA. Past President American Chemical Society. Topic: *The chelate effect in binding, catalysis, and chemotherapy.*

Professor Margaret Brimble - Chemistry Department, University of Auckland (Organic Chemistry). Topic: *Strategies for organic synthesis.*

Dr Ian Brown - Industrial Research Ltd (Ceramics). Topic: *Ceramic Chemistry - gateway to new technologies.*

Sir John Cadogan - Formerly Director General of Research Councils UK. Topic: *Chemistry for the 21st century.*

Dr Bill Henderson - University of Waikato (Inorganic Chemistry). Recipient of the 1997 Easterfield Award. Topic: *Bugs, metals and weighing machines.*

Professor Ole Hindsgaul - University of Alberta, Canada. Topic: *Advances in carbohydrate synthesis and biological evaluation.*

Associate Professor Jim Johnston - Head, School of Chemical and Physical Sciences, Victoria University of Wellington (Industrial Chemistry). Topic: *Adding value using chemistry - New process and product development.*

Professor Douglas Russell - Head, Chemistry Department, University of Auckland (Physical Chemistry). Topic: *Looking at chemistry in a different light - Application of lasers in fundamental and applied chemistry.*

Professor Vern Schramm - Chairman, Department of Biochemistry, Albert Einstein College of Medicine, NY, USA. Topic: *Transition state inhibitors of nucleoside processing enzymes.*

Call For Papers

Abstracts are invited on any chemistry related topic. Abstracts should be typed as camera ready copy on A4 sheets with 20 mm margins on all sides. Font should be 12pt Times with 1.5 line spacing. Any illustrations should be included in the single page. The title should be in capitals, centred with list of authors, affiliations and address directly underneath. Abstracts should be no more than 200 words.

Abstracts not containing pictures, diagrams, or chemical representations may be submitted by email in MS Word 5-7 format to:
margaret.brown@vuw.ac.nz

Registration and Abstracts

Registration and Abstracts must be received by the Conference Secretary no later than September 17. Please forward the completed tear-off registration form to the Conference Secretary.

Reservations for hotels are to be made directly with the hotel. Use of the enclosed booking form will help ensure the conference rate at the hotels. Reservations for Weir House are to be made with the Conference Secretary also using the booking form.

Payment for registration, Weir House and optional tours should be included with the completed registration form.

Send form to: NZIC99 Conference Secretary, Margaret Brown, School of Chemical and Physical Sciences, Victoria University of Wellington, P O Box 600, Wellington, New Zealand. Fax: (04) 4955237, or (04)4635237

Accommodation (see attached form)

University housing (Weir House), 5 minutes walk away is available. Several hotels are available within a short distance and conference rates have been organised at the James Cook Centra (rooms from $150 + GST per night) and the Novotel (rooms from $125 + GST per night).

For Weir House bookings return the enclosed form to the conference secretary. Delegates using hotels are requested to make their own arrangements direct with the hotel using the enclosed form. Please let the registration desk know where you are staying or fill in these details on the registration form.

Lunch is available at a number of cafes on campus or downtown. Evening meals are available at downtown restaurants, hotels or Weir House. Morning and afternoon teas will be provided.

Social Programme

All delegates are welcome to attend the talk on intellectual property and mixer on Sunday evening. The functions on Monday and Tuesday evening are open to accompanying persons as is the conference dinner on Wednesday evening.

Activities for accompanying persons will be arranged during the conference if sufficient interest is shown. Please indicate your interest by completing the check boxes on the registration form.

Trips to Kapiti Island bird sanctuary and a Martinborough winery tour are proposed for Thursday. Please check the boxes on the registration form if interested.

Conference Chair

Associate Professor Jim Johnston
Head, School of Chemical and Physical Sciences, Victoria University of Wellington.

Committee

Adrian Bennett - BRANZ, Dr David Bibby - Industrial Research Ltd, Dr Stephen Bloor - Industrial Research Ltd, Dr Richard Furneaux - Industrial Research Ltd, Professor John Spencer - Victoria University of Wellington.

Student Poster Competition (Win a trip to Hawaii)

Up to 4 Student Poster Prizes are available to registered students. In addition, the NZIC will provide sponsorship (travel, accommodation and registration) for one PhD student who is registered at a New Zealand University and is a NZIC student member to attend and present a student poster at the Pacifichem 2000 conference in Hawaii, December 2000. The winner will be selected from the student posters at this NZIC conference.

Fees (GST Inclusive)

Conference	**NZ$**
Member full registration	$390
Member registration - late	$430
Student registration	$90
Student registration - late	$110
Non member full registration	$450
Non member full registration - late	$490
One day member registration	$185
One day member registration - late	$210
One day registration	$220
One day registration - late	$245
Student one day registration	$45
Student one day registration - late	$57

NZIC99 - November 21-24 1999, Victoria University of Wellington, New Zealand

Accommodation Reservation Form

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Organisation: _____

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Novotel Wellington	☐	☐	☐	
Weir House	☐	☐	☐	☐

If you intend sharing a twin/double room, please give the name of the second occupant: _____

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Estimated time of arrival (if known): _____ Smoking (Y/N): _____

Other requirements (please indicate any dietary requirements): _____

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For hotel accommodation, please post or fax this form directly to the address/number given on the other side of this sheet (previous page). For Weir House accommodation, please post or fax this form directly to the Conference Secretary with your remittance. Remember to keep a copy of both sides for your records.

NZIC99 Registration Form

Name: _____

Address: _____

_____

Affiliation: _____

Fax: _____

Email: _____

Accompanying Person (Name): _____

Paper Title: _____

_____

Oral Presentation ☐ Poster ☐ Student Poster ☐

ABSTRACT AND REGISTRATION BY SEPTEMBER 17 1999

Accommodation

For our information - Please make own bookings except for Weir House.

Hotel Name: _____

Duration of Stay: In _____ Out _____

(This form is also at http://www.vuw.ac.nz/nzic99)

Events (please indicate attendance)

Sunday social function evening	Free	☐
Monday evening mixer	Free	☐
Tuesday evening public lecture	Free	☐
Wednesday Conference Dinner at Te Papa	$85	☐

Optional Tours Thursday (please indicate attendance - do not send remittance at this time)

Martinborough Winery tour - barbecue	approx. $75	☐
or Kapiti Island Bird Sanctuary	approx. $75	☐

Accommodation

Weir House as per accommodation form $.....

Payment

Cheque (NZ$) ☐ Mastercard ☐ Visa ☐

Number:...../...../...../.....

Name: _____

Expiry Date: _____

(Please make cheques payable to NZIC99 Conference)

Signature: _____

Accompanying Person Programme

I am interested in the accompanying person programme

☐ yes ☐ no

ACCOMMODATION NZIC99

James Cook Centra

The James Cook is situated in the heart of the city but is only 10-15 minutes walk from the University (uphill!). As an alternative to walking uphill you can take the cable car and walk from either the University or Botanical Garden stops. The James Cook offers single/twin/double rooms at $150 (NZIC99 rate) plus GST (12.5%) - breakfast is extra. If you prefer more luxurious accommodation with a view of the harbour there are Premium Rooms and suites available at rates between $215 and $415. If you are interested in these, please ask the hotel for details mentioning that you will be attending NZIC99.

The rooms at $150 all have private bathrooms, air conditioning, tea/coffee making facilities, TV (with Maginet movie channel and Sky Television), phone, radio, fridge, minibar and modem jack.

For James Cook Centra, please return the accommodation form to: James Cook Centra, 147 The Terrace, Wellington, New Zealand. Telephone: (+64-4)-499 9500, Facsimile: (+64-4)-499 9800

Novotel Wellington

The Novotel is on the hillside below the University, with a 5-10 minutes walk to the Conference venue and an easy walk to the city centre. The Novotel offers rooms at $125 plus GST (NZIC99 rate), breakfast extra (buffet approx $17.50). Some of the rooms have spectacular views of the city and harbour.

The rooms are equipped with STD/IDD direct dial telephones, iron/ironing board, minibar, hair dryer, coffee and tea making facilities, TV (with in-house movies and Sky TV), radio and air conditioning.

For Novotel Wellington, please return the accommodation form to: Novotel Wellington, 345 The Terrace, P O Box 6753, Wellington, New Zealand.
Telephone: (+64-4)-385 9829, Facsimile: (+64-4)-3852119

Weir House

Weir House is a student residence situated 5 minutes' walk from the conference venue. Most of the rooms are single but there are a very limited number of twin-share and linked single rooms. Some of the rooms have attractive views of the city and harbour. Toilet facilities are shared, although most of the single rooms have a washbasin. Small kitchenettes are on each floor with complimentary coffee and tea, and there are self-service laundry facilities. The rates for bed and breakfast (including GST) are:

Student (per person)	Any room type	$25 per night B&B $36 per night B & 3 meals
Non-Student (per person)	Single	$40 B&B
	Twin share	$25 B&B
	Linked single	$32 B&B

Lunch and dinner may also be purchased at very reasonable rates, although 24 hours notice is requested.

Other styles of accommodation are available nearby. The Sharella Motor Inn (Tel: +64-4)-472 3823) is within walking distance and those seeking backpackers accommodation may wish to try Trekkers (Tel: +64-4)-385 2153).

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- OTHER (please specify) ☐

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AA SPECTROSCOPY	☐	ICP, ICP-MS	☐
NMR	☐	POLYMERASE CHAIN REACTION	☐
THERMAL ANALYSIS	☐	FTIR/IR SPECTROSCOPY	☐
MICROSCOPY	☐	ELEMENTAL ANALYSIS	☐
pH/ELECTROCHEMISTRY	☐	PARTICLE SIZE ANALYSIS	☐
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XRF or XRD	☐	OTHER (please specify)	☐

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