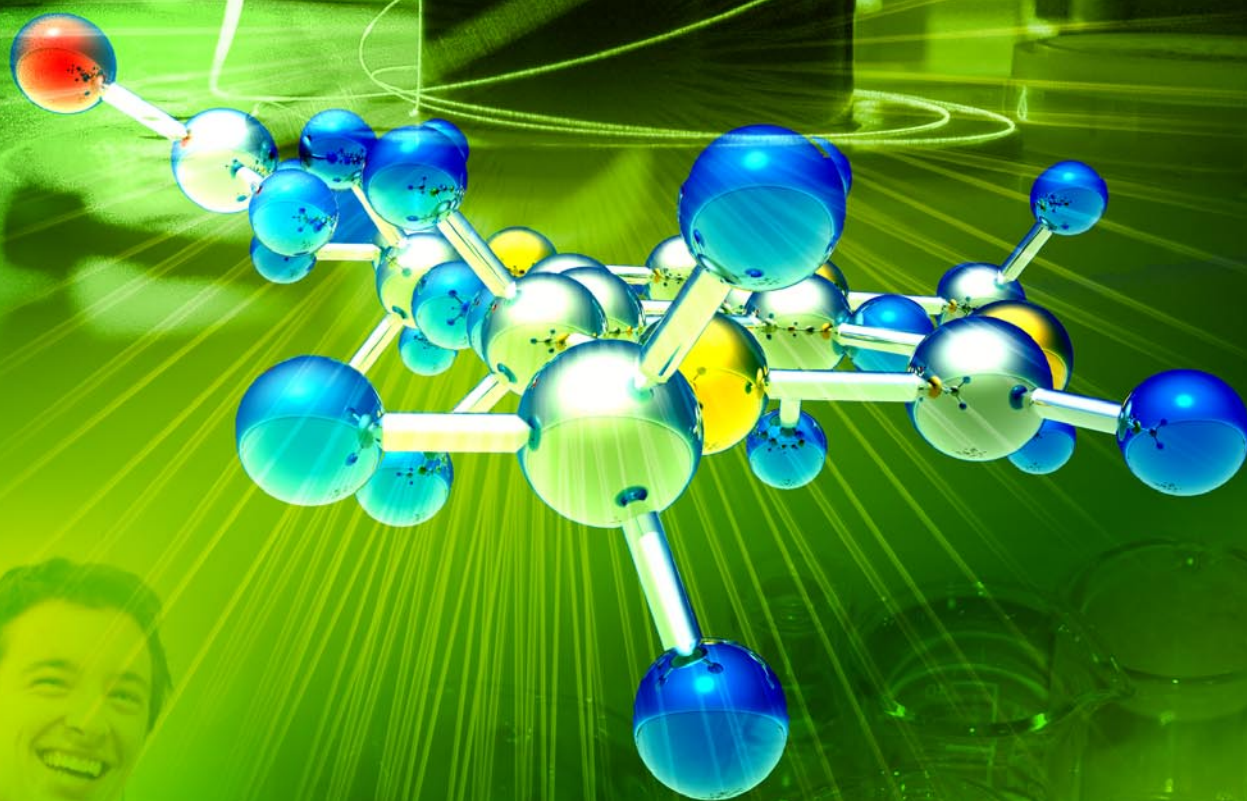


**Annual Report 2002**



THE UNIVERSITY OF  
MELBOURNE



SCHOOL OF  
**Chemistry**

# Sponsors

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# Head's Report

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During 2002 the School of Chemistry continued to fulfil its mission of training professional chemists, undertaking internationally recognised research programs and delivering chemistry subjects to students across many Faculties and Departments of the University. As one of the “enabling” sciences, chemistry plays an important role in ensuring that an understanding of molecular structure, properties and reactions are conveyed to students as essential background for a range of degree courses. The School delivers lecture and laboratory programs to approximately 1400 first year students and has implemented a number of innovations, including the development of on-line interactive learning packages, the operation of a Learning Centre and support of transition activities, aimed at enhancing the student learning experience.

Building issues continue to occupy planning in the School with renovations progressively occurring in the major teaching laboratories of the existing building. The construction of the Bio21 Molecular Science and Biotechnology Institute, that will house a number of research groups of the School, continues to progress with an anticipated occupation date of mid 2004. A major feature of the Bio21 Institute is the inclusion of state-of-the-art laboratories to house combined instrumentation facilities. A dedicated NMR “cave” will house nine instruments including an 800MHz instrument recently funded with State Government support. An ARC Linkage infrastructure grant application to establish a Mass Directed Molecular Resolution Laboratory in the Bio21 Institute also received funding.

In July the State Government announced the success of an application to establish the Victorian Institute for Chemical Sciences (VICS) under its Science, Technology and Innovation (STI) infrastructure initiative. Under this joint initiative by the Schools of Chemistry at Melbourne and Monash Universities and the Department of Applied Chemistry at RMIT, the \$5 million grant from the Government will be matched by support from the Universities to create an institute dedicated to the advancement of the chemical sciences in the region. VICS will operate collaborative education programs, conduct research in priority areas for the State, and support major scientific instrumentation purchases. Dr Peter Lehman, the School's Executive Manager, has been serving in the role of interim Director of VICS.

Staff continued to receive increasing external funding support for their research programs and the ARC Special Research Centre, the Particulate Fluids Processing Centre, a research network between staff in Chemical Engineering, Mathematics and Chemistry, received news that it will be funded for a further 3 year period from 2003. It is always particularly pleasing to see the achievements of students and staff recognised. Staff members David McFadyen, Richard O'Hair and Muthupandian Ashokkumar were promoted to Associate Professor, Associate Professor and Reader, and Senior Research Fellow respectively. Carl Schiesser was awarded the Grimwade Prize in Industrial Chemistry while past student and Principal Fellow Calum Drummond was the recipient of the David Syme Research Prize.

# Head's Report

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There have been a number of staff changes in the School. Peter Thistlethwaite, a long serving member of academic staff, announced his retirement. Peter has contributed to all facets of the School's activities including a period as Head of the Department of Physical Chemistry. Peter's presentation of "The Magic of Chemistry" demonstration lecture on Discovery Day and for other occasions is legendary and we hope we may be able to entice him back for return performances in the future. Rob Capon also departed to take up a position at the University of Queensland. We have been fortunate to recruit a number of outstanding new lecturing staff and we welcomed Spencer Williams (UC Berkeley) during the year while Uta Wille (University of Kiel) and Craig Hutton (University of Sydney) will join the School in 2003.

Ian Hamilton, a senior lecturer in the School, passed away suddenly during the year. Ian had contributed considerably to our efforts in promoting environmental and analytical chemistry programs and enhancing our links with industry. We were also saddened to hear of the passing of Bernard Hoskins, a former academic staff member and Principal Fellow in the School. Our condolences are conveyed to their friends and families.

2003 will mark a number of significant anniversaries for the University, Faculty and School including the sesquicentenary of the University, the centenary of the Faculty of Science and the centenary of the Melbourne University Chemical Society. Chemistry was one of the first disciplines taught at the University, and the School can look forward with pride to celebrating these milestones and continuing to provide leadership in chemical education and research for the benefit of the University and the community.

Ken Ghiggino  
Masson Professor of Chemistry  
Head, School of Chemistry

# Academic Staff

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## Head of School and Masson Professor of Chemistry

Kenneth Philip Ghiggino, BSc *NSW* PhD *NSW* DipEd *Melb* FRACI

## Professors of Chemistry

Robert John Capon, BSc *W.Aust.* PhD *W.Aust.* FRACI

Franz Grieser, BSc *Melb* PhD *Melb* FRACI

Francis Patrick Larkins, AM BEd *Melb* MSc *Melb* DSc *Melb* DPhil *Oxf.*  
DipAdvMath *Oxf.* FAA FTSE FRACI FAIE FAIP  
(Deputy Vice-Chancellor [Research])

Richard Robson, BA *Oxf.* DPhil *Oxf.* FAA

Carl Herbert Schiesser, BSc *Adel.* PhD ANU DSc *Adel.* FRACI

Anthony Gordon Wedd, BSc *Tas.* PhD *Tas.* DSc *Tas.* FRACI

## Associate Professors and Readers

Melvyn Gill, BSc *Brad.* PhD *Brad.* DSc *Brad.* FRACI FRSC

Paul Mulvaney, BSc *Melb* PhD *Melb*

Frances Separovic, BA *Macq.* PhD *NSW* MRACI MAIP

Charles Graham Young, BSc *ANU* PhD *ANU* FRACI

## Associate Professors

Peter James Thistlethwaite, MSc *Melb* PhD *Melb* DipEd *Melb*

Peter Allan Tregloan, BSc *Adel.* PhD *Adel.* MRACI

## Senior Lecturers

Stephen Peter Best, BSc *Syd.* PhD *Syd.* MRACI

Evan Bieske, BSc *Qld.* PhD *Griff.*

Michelle Louise Gee, BSc *Melb* PhD *NYAS* MRACI

Ian Campton Hamilton, BSc *Melb* PhD *Melb* DipEd *Monash* (dec.)

William David McFadyen, BSc *Melb* PhD *Melb* DipEd *Melb*

Richard Alfred John O'Hair, BSc *Adel.* PhD *Adel.*

Mark Anthony Rizzacasa, BSc *W.Aust.* PhD *W.Aust.* MRACI

Jonathan Michael White, BSc *Cant.* PhD *Cant.* FRACI

## Lecturers

Spas D Kolev, BSc *Sofia* PhD TU *Budapest*

Spencer James Williams, BSc *W.Aust.* PhD *W.Aust.*

# Academic Staff

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## Queen Elizabeth II Research Fellow

Trevor Alexander Smith, BSc *Melb* PhD *Melb* MRACI

## ARC Research Fellow

Shane Thomas Huntington, BSc *Melb* PhD *Melb*

## Transition Teaching Fellow

Robert Edward Charlesworth, BSc *Melb* DipEd *Melb*

## Senior Research Fellow

Muthupandian Ashokkumar, BSc *Madurai-Kamaraj* MSc  
*Madurai-Kamaraj* PhD *Madras* MRACI

## Research Fellows

Brendan Francis Abrahams, BSc *Melb* PhD *Melb* DipEd *Melb*

Agatha Garavelas, BSc *Monash* PhD *Monash*

Martin Johannes Grannas, BSc *Melb* PhD *Melb*

Sally Anne Hutchinson, BSc *Deakin*

Patricia Ann Jackson, BSc *Melb* PhD *Camb.*

Talbi Kaoudi, BSc DEA PhD *Institut de Chimie des Sub Nat France*

Raja Kanumuri, BSc *Andhra* MSc *Andhra* PhD *Andhra*

John William Perich, BSc *Melb* PhD *Melb* DipEd *Melb*

Harry Morris Quiney, BSc *Monash* MSc *Monash* PhD *Oxf.*

Colin Edward Skene, BAppSc *RMIT* PhD *Monash* MRACI

Damian Slizys, BSc *Melb* PhD *Melb* LLB *Melb*

Michael Stewart, BSc *Cant.* MSc *Cant.* PhD *Cant.*

Tamil Selvan Subramanian, BSc *Maduria-Kamaraj* PhD *Maduria-Kamaraj*  
MSc *Alagappa*

Zhiguang Xiao, BSc *Fujian TU* MSc *Fujian TU* PRC PhD *La Trobe*

## Wilsmore Fellows

Andrew Bruce Holmes, BSc *Melb* MSc *Melb* PhD *UC London* MA *Camb.*  
ScD *Camb.* FRS

Thomas James Simpson, BSc *Edinburgh* PhD *Bristol* DSc  
*Edinburgh* FRS

Gary Weisman, BS *Kentucky* PhD *Wisconsin-Madison*

# Academic Staff

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## Research Assistants

Laura Andrau, PhD *Fribourg*

Jilliarne Andropof, BSc *Melb* PGD Sci. *Melb*

Nuno Cabral, BAppSc *RMIT* BSc En.Mgment *Victoria UT* BSc *Melb*

Christopher Donner, BSc *Melb* PhD *Melb*

Kerri Dunn, BSc *Deakin* PhD *Deakin*

Mariana El Sous, BSc *Melb*

Diana Goodall, BSc *Melb* PhD *Melb*

Marissa Grace Haywood, BSc *La Trobe* PhD *Melb*

Sonia Horvat, BSc *Melb* PhD *Melb*

Alicia Maree Loveless, BSc(AqSci) *Deakin*

Tamara Perchynock, BSc *Melb* PhD *Melb*

Fiona Helen Scholes, BSc *Monash*

Orla Wilson, BSc *Dublin* MSc *Dublin*



# Honorary Staff

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## Professors Emeritus

Donald William Cameron, MSc *Qld.* MA *Camb.* PhD *Manc.* ScD *Camb.*  
FRACI

Thomas Aloysius O'Donnell, PhD *Melb* DSc *Melb* FRACI

## Professorial Fellows

Thomas William Healy, BSc *Melb* MSc *Melb* PhD *Col.* Hon DSc *Melb*  
FRACI FAA FTSE

Robert Oliver Watts, BSc *Lond.* PhD *ANU* FAA FRACI

## Principal Fellows

Ronald Cooper, BSc *Leeds* PhD *Leeds* FRACI

Calum John Drummond, BSc *Melb* PhD *Melb*

Bernard Foster Hoskins, BSc *NSW* PhD *NSW* DSc *NSWASTC* FRACI  
(dec.)

Peter Trembath McTigue, BSc *Melb* MSc *Melb* DPhil *Oxf.*  
FRACI

Roger Francis Martin, BSc *Melb* PhD *Melb*

Richard Pau, BA *Oxf.* DPhil *Oxf.* (joint appointment with Biochemistry and  
Molecular Biology),

James David Smith, BSc *Durh.* PhD *S'ton.* DSc *S'ton.*

Colin Leslie Young, BSc *Brist.* PhD *Brist.* FRACI

## Senior Fellows

Kevin Jeffrey Barnham, BSc *Qld.* PhD *Qld.*

Colin James Barrow, BSc *Cant.* PhD *Cant.* MRACI

Robert Craig, BSc *Melb* MSc *Melb* DPhil *Oxf.*

Donald Neil Furlong, BSc *Brun.* PhD *Brun.* FRACI

Patrick Hartley, BSc *Warw.* PhD *Imperial Coll of Sci. Tech & Med.*

Valda May McRae, BSc *Melb* BEd *Melb* PhD *Melb*

## Fellows

Uwe Ackermann, Diplom. Chem. *Heid* PhD *Heid*

Jefferey Comerford, BSc *Melb* PhD *Melb*

Maurits R R De Planque, MSc *Utrecht* PhD *Utrecht*

Tapan Ganguly, BSc *Jadavpur* MSc *Jadavpur* PhD *Jadavpur*

# Honorary Staff

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Richard David Harcourt, BSc *Melb* PhD *Monash* DipEd *Melb* MRACI

John Hodges, BSc *Delaware* PhD *Arizona*

John Lambert, BSc *Melb* PhD *Melb*

John Michael Lawlor, BSc *Lond.* PhD *Lond.*

Hiroshi Matsubara, BSc *Osaka* PhD *Osaka*

Laurence Meagher, BAppSc Chem. *WAIT* Grad Dip Chem. *WAIT*  
M App Sc *Curtin* PhD *ANU*

Harry Morrison, BA *Brandeis* MS *Harvard* PhD *Harvard*

Petronella Nel, BSc *Melb* PhD *Melb*

Simon John Orchard, BSc *S'hton* PhD *S'hton*

John Perich, PhD *Melb* BS *Melb* DipEd *Melb*

Gareth James Price, BSc *Bath* PhD *Bath*

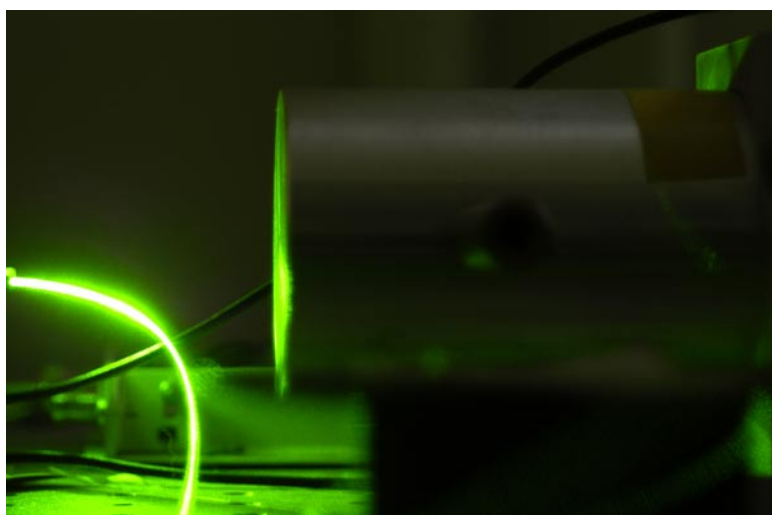
Deddi Prima Putra, Dr Pharm. *Andalas* *Aphotelcer* *Andalas* PhD *UHP*  
*France*

Markus Stefan Schatz, Dip Chem *FAU Erlangen Nurn.* PhD *FAU Erlangen*  
*Nurn.*

Sang Thang, BSc *Saigon*, PhD *Griffith*

Gerard Joseph Wilson, BSc *NU Ireland* PhD *RSC ANU*

Jan Ramuald Zdysiewicz, BSc *Adel.* PhD *Adel.*



## General Staff

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Marino Artuso  
Bernice Bedford  
Michael Blake  
Vicki Burley  
John Carmichael  
Russell Charles  
Leigh Crawford  
Jo Dalvean, B.App.Sci. *Monash*  
Fran Dynan, AdvDipAcctg *VU*  
Jim Dynan  
Greg Ellis, BAppSci *FIT* DipEd *H'thorn Inst Ed*  
William Fry  
Robert Gable, BSc *Melb.* PhD *Melb.*  
Les Gamel  
Kerry Hambridge  
Caithleen Jones, BA *Melb.*  
Ben Kirk  
Peter Lehman, ARMIT Appl.Chem. MSc *E.Anglia* PhD *E.Anglia*  
Ross Lineham  
Tang-Kuan Lim, BSc *Malaya* PhD *Brit.Col.*  
Brendan Mangan  
Richard Mathys  
Alf Meilak  
Peter Mills, DipAppChem GradDip(Met) *RMIT*  
Gavin Nebauer  
John Nuske  
Des Odgers  
George Papadopoulos, BEng *VUT*, DipAppSc-OH&S *RMIT*  
Jennifer Scott  
Jakub Szarlat  
Doug Taylor, BAppSc(Chem) *RMIT* GradDip(ClinSc) *Riverina CAE*,  
GradDipEd *Melb CAE*  
Sioe See Volaric, BSc MSc *Syd*  
Gillian Webster

# Academic Staff News

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Dr Spencer Williams joined the School in July as a lecturer with a special interest in Biological Chemistry.

## Academic Publications

A listing of research publications for 2002 is available on the School website at <http://www.chemistry.unimelb.edu.au/research>

## Visiting Fellows

The School of Chemistry was pleased to welcome, as Wilsmore Fellows in 2002, Professors Andrew B Holmes, University of Cambridge, UK, Gary R Weisman, University of New Hampshire, USA and Thomas J Simpson, University of Bristol, UK.

Other distinguished visitors who were with us for extended periods of time included Professor Tapan Ganguly, Indian Association for the Cultivation of Science, India, Professor Harry Morrison, Purdue University, USA, Dr Gareth Price, University of Bath, UK, Dr Deddi Prima Putra, University of Andalas, West Sumatra, Dr Markus Schatz, University Erlangen, Germany.

We had many shorter visits from other academics, research chemists and post-graduate students, most of whom delivered seminars while they were working with research groups in the School.

## Awards, Prizes & Medals

- Professor Carl Schiesser was honoured with The Grimwade Prize for 2002.
- Dr Richard O'Hair was awarded the John and Allan Gilmour Research Award.
- Dr Spencer Williams was granted the Selby Research Award.
- Dr Shane Huntington was recognised for his work on "Science A-Go-Go", a program on Melbourne's RRR Community Radio station with an Atom Commendation - Outstanding Radio Broadcast.

## Melbourne University Chemical Society (MUCS) 2002

Professor Carl Schiesser – President (acting)

Dr Spas Kolev – Secretary

Robert Charlesworth – Treasurer

Student Members: Anthony Cuzzupe, Chantal Falzon, Tahli Fenner, John Feutrill, James Hutchison, Melissa Koay

For 2002 MUCS Lecture program see website.

<http://www.chemistry.uni.melb.edu.au/news/mucs2002.html>

# General Staff News

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Jo Dalvean joined the School as a multimedia programmer and graphic designer.

Caithleen Jones was appointed PA to Professor Carl Schiesser and also assists with School administration.

Gavin Nebauer assisted in the Chemistry Store while Mike Blake was on secondment to the University System Project. He remains a part of the team.

Des Odgers joined the technical staff in the School's laboratories.

## In the Postgraduate School

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### Chemistry Postgraduate Society 2002 (CPS)

Thomas Munro – President

James Hutchison – Secretary

Lyndal Hill – Treasurer

Vicki Burley – Staff Representative

Zoe Loh

Tim Quach

Barbara Li

Ben Clark

### Awards, Prizes & Scholarships

Monica Reum Prize

Michelle Styles

Pore Scholarships

Sheena Wee

Loxton Bequest Scholarship

Feda' Ali

Elizabeth and Vernon Puzey

Postgraduate Research Scholarship

Hadi Lioe

Victorian Young Tall Poppy Award

Gavin Reid

# Postgraduate Degrees Awarded

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## Doctor of Philosophy and Master of Science

The School of Chemistry congratulates the following students who completed their postgraduate studies in 2002.

Comerford, Jeffrey	Solution and Photochemical Behaviour of Platinum Complexes
Woods, Annabel	Investigations into the Synthesis, Stabilisation and size-dependent Properties of Zinc Oxide Quantum Dots
Lam, Yuen Han (Tracey)	NMR Determination of Peptide Confirmation and Orientation in a Membrane in a Peptide-inhibitor Complex
Styles, Michelle	Gas Phase Studies of Biomolecules Complexed to Ligated Platinum (II) Derivatives
Thompson, Andrew	Structural Studies of the Neurotoxic Proteins of Prion Disease and Alzheimers Disease
Bell, Toby	Photoinduced Electron Transfer in Bridged Multicromophoric Compounds
Tan, Chor Sing	MSc -An Imaging Ellipsometry Study of the Drain age of Aqueous Film on Approach of an Oil Droplet to a Solid Surface: A Model for Emulsion Stability and Detergency
Funston, Alison	Donor-Acceptor Compounds as Models for Radiation Activated ProDrugs
Millar, Andrew	Aspects of High-Valent Oxo Chemistry of Molybdenum and Tungsten
Nguyen, Oanh	Towards Selenium and Tellurium Containing Antioxidants
De Yong, Leo	MSc - The Environmental degradation of pyrotechnic magnesium powder
Pool, Brett	Structure Reactivity studies into the Retro Diels-Alder reaction
Horvat, Sonia	Understanding tomolytic translocation chemistry: An Abinitio study of some (1, <i>n</i> )-SILYL, GERMYL & STANNYL Transfers of synthetic significance
Issa, William	Synthesis and radiolabelling of a thymidine analogue for use in positron emission tomography

# Postgraduate Degrees in Progress

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Ali, Feda' Emad Atta	Metal catalyzed oxidative damage and conformational changes of amyloid-beta peptide (abeta) in Alzheimer's disease
Amini, Nazanin	On line determination of mercury by membrane separation flow injection analysis.
Ampem-Lassen, Eric	Studies in photonic device imaging and characterisation
Balla, Mohamed Alsanous	NMR studies of the interaction of toxins and antimicrobial peptides with lipid membranes
Bondin, Mark Ian	Redox initiated structural change in the iron sulfur compounds.
Borg, Stacey John	Study of the chemistry of Hydrogen activation.
Boyd, Simon	Photo-chemistry of novel inorganic complexes
Bradley, Melanie Anne	Sonochemical production of latex particles by emulsion polymerisation
Bullen, Craig	Silica coated quantum dots
Carland, Michael William	Free-radical routes to novel Selenium-containing B-Lactam Antibiotics
Chen, Ming	Photoactive functional polymers
Clark, Benjamin Robert	Bioactive metabolites from marine sources
Cuzzupe, Anthony Nicholas	Synthesis of biologically active furanoid natural products
Dinev, Zoran	Covalent capture of supramolecular assemblies.
Dong, Shirley Wei-Shin	Isolating bioactive compound from marine organism
Doonan, Christian James	Synthesis and study of tungsten and molybdenum containing enzymes
Drechsler, Alison Patricia	Investigation of natural products from marine ecosystems
Falzon, Chantal Therese	Computational and mechanistic studies of free-radical carbonylation chemistry
Fenner, Tahli	Toward novel selenium and tellurium vitamin E analogues.
Feutrill, John Thomas	Synthesis of bioactive metabolites from myxobacteria
Ganame, Danny	Synthesis of cytotoxic macrolides from marine sources.
Hassall, Kathryn Sarah	Synthesis and structural characterisation b-silylated carbenium ions.
Hill, Lyndal Michelle Ruth	Bio-inorganic chemistry

# Postgraduate Degrees in Progress

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Hilli, Ferdows	Synthesis of cytotoxic macrolides
Holloway, Georgina Anne	Synthesis of Cytotoxic marine macrolides
Hudson, Timothy Adam	Synthesis and structural characterisation of infinite co-ordination networks.
Hutchison, James Andell	Self-assembled supramolecular systems for energy and electron transfer
Kesarios, Nick	The synthesis and PET labelling of tyrosine kinase inhibitors.
Koay, Melissa Shao Tang	Copper tolerance proteins
Koppens, Merran Louise	Protecting groups compatible with DNA and peptide synthetic chemistries
Larsen, Caitlin Anne	Synthesis of Dendrimeric Bioconjugates
Li, Barbara Tsz Yam	Studies of naturally occurring compounds, especially secondary metabolites from indigenous Australian fungi
Liu, Edward Hsiang-Te	Bioactive marine metabolites as drugs for the future
Loh, Zoe Miranda	Development of intermolecular potential energy surfaces for ion-neutral interactions
Malarek, Daniel Andrzej	Metal-based canonical receptors
Malarek, Michael Severyn	Inorganic / organometallic complex synthesis.
Mariotti, Andrew Walter Anthony	Redox chemistry of polyoxometalate anions
Mathai, Sean	Photochemistry and imaging porphyrin photosensitisers
Mattsson, Eric Ronald	Bioactive natural products from marine microbes
Maxwell, Jane Meredith	Use of the scanning probe microscope to measure selected physical properties of the constituent cellular components of normal modified wool fibres
McClure, Melanie Simone	Investigations into group 4 metal directed ring expansion reactions.
McLean, Scott	Protein adsorption & biocompatibility
McNally, Michelle	Bioactive natural products from marine organisms.
Mitchell, Jeffrey Peter	Synthesis of macrocyclic and dendritic peptides
Moylan, Michael David	Inorganic 5-connected nets.
Muir, Ineke Lynn	Surface forces and adsorption profiles of proteins adsorbed onto soil surfaces
Munro, Thomas Anthony	Synthesis of psychotropic and insect antifeedant diterpenoids



# Postgraduate Degrees in Progress

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Pace, Peter	The development of state of the art analysis techniques for optical fibres and photonic devices based on scanning probe microscopy
Ratnayake, Ranjala	Marine bioprospecting: drug from the sea
Roberts, Kade Douglas	DNA cleavage by restriction Enzyme Mimics
Singla, Ritu	Combined sonochemical and photochemical decomposition of chemical pollutants.
Sproules, Stephen Andrew	Molybdenum and tungsten sulfur chemistry in biological systems.
Tickler, Anna Kathryn	Synthetic development and related studies of amyloid forming peptides and proteins
Vincent, Kylie Alison	Elucidation of the chemistry of FeMoco
Vrkic, Ana Katarina	Ion-molecule reactions of Oligonucleotides in the gas phase including H/D exchange and (CH <sub>3</sub> ) <sub>3</sub> SiX reactions.
Vu, Thanh Duc	Sonoluminescence from aqueous solutions
Wade, Timothy Lawrence	High power, high frequency supercapacitors
Waters, Tom	Gas phase chemistry of molybdenum-oxo species
Wee, Sheena	Studies of the interaction of 4 metal complexes with biomolecules in the gas phase using mass spectrometry techniques
Wild, Duncan Andrew	Infrared spectroscopy of size selected anion cluster
Wilson, Rosemary Louise	Studies of charged complexes and clusters in the gas phase
Zahirovic, Sabina	Studies of charged complexes and clusters in the gas phase
Zammit, Steven	Synthesis of bioactive marine metabolites
Zanatta, Shannon Dean	Synthesis of biologically active spiroketal containing natural products
Zeng, Le	Kinetic Studies on Some Enantioselective Free-Radical Reductions

# Undergraduate Scholarships & Prizes

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## 100 Level

Exhibition Kerry Ng

Dwights Prize Nicole Cook

## 200 level

C.A. Taylor Prize Christine Duke

The Huntsman Australia Prize Caroline Egan

## 300 Level

Dow Australia Scholarship Devi Sunartio

Cuming Major Scholarship Rebecca Grange

Fred Walker Scholarship Devi Sunartio

J.S. Anderson Prize Christopher Barlow

Cuming Minor Scholarship Nathan Fifer

## 400 Level

Dulux Australia Prize Tim Quach

Dixon Research Scholarship Yit Wooi Goh

Professor Kernot Research Scholarship Tim Quach

Riseborough Prize Hadi Lioe

The Huntsman Australia

Award for Research Excellence Hadi Lioe

## Student presentations

Hadi Lioe won best poster award at the 23rd Australian Colloid and Surface Science Student conference.

Nazanin Amini was awarded a poster presentation prize at the 10th Annual Research and Development Topics conference at Deakin University, Warrnambool in December 2002.

Sheena Wee received the Young Investigator Award and best speaker award at the Autumn Peptide Symposium, Howard Florey Institute, April 2002.

Duncan Wild received the best student poster presentation award and James Hutchison received a highly commended prize for their presentations at the RACI/NZIC Conference on Physical Chemistry held at Christchurch New Zealand.

Anna Tickler received a student prize at the Lorne Protein Conference.

Tom Waters presented 2 different talks in 3 days at 2 different conferences (19th Australian and New Zealand society for Mass Spectrometry-and the National Conference of the Royal Chemical Institute Inorganic Chemistry Division) and won the best student talk at both conferences.

# Research Funding

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ARC and Industrial Grants to the School in 2002 totalled \$4,219,565.

## Details of New Grants Awarded in 2002

Dr M Ashokkumar	Combined sonochemicals & photocatalytic decomposition of chemical pollutants
Dr Stephen Best	Redox initiated structural change in iron-sulfur compounds
Dr Evan Bieske	Approaching anion solvation from the bottom up: infrared studies of negatively charged complexes & clusters
Prof. Kenneth Ghiggino	University-Industry Linkages in Chemistry (Uniche)
Prof. Franz Grieser	Interface, Particle and Fluid Characterisation Laboratory Static and Dynamic Forces in Colloidal and Fluid Systems
Dr Spas Kolev	On-line determination of mercury by membrane separation flow injection analysis
Prof. Frank Larkins	Computational software development for molecular physics and quantum chemistry studies using relativistic quantum electrodynamics
Dr David McFadyen	Development of an online test bank for 100-level Chemistry
A/Prof. Paul Mulvaney	Small angle neutron scattering from Nanoparticle crystals
Dr Mark Rizzacasa	Design of synthetic routes CBL 316 Design and Synthetic Routes for Synthesis and the Synthesis of CBL 316 & Analogues Synthesis of bioactive metabolites from bacteria-Synthesis of bioactive metabolites from Myxobacteria
Prof. Richard Robson	Coordination polymers & oligomers
Prof. Carl Schiesser	Performance Chemistry of Thermoset Surface Coatings
A/Prof. Frances Separovic	Fluorescence and NMR studies of Membrane peptides and proteins Biologically active peptides from anurans Structure & Membrane interactions of Lytic peptides & pore-forming toxins
A/Prof. Peter Tregloan	A collaborative evaluation of the teaching of Chemistry and Biology at the University of Melbourne and the University of Sydney
A/Prof. Charles Young	Synthetic molybdenum hydroxylases-Synthetic Molybdenum Enzymes

# Victorian Institute for Chemical Sciences

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In a bold new venture, the Chemistry Schools at the University of Melbourne and Monash University and the Department of Applied Chemistry at RMIT University have joined forces to create an institute dedicated to the advancement of the chemical sciences in Victoria—the Victorian Institute for Chemical Sciences (VICS).

The founders' vision is that it will become the leading multi-campus institute in Australia for teaching and research in chemical sciences, having a critical mass of expertise and resources and recognised internationally for the quality and breadth of its research and the outstanding opportunities provided by its educational programs.

**For more information about VICS please go to <http://www.vicsco.com.au>**

## Bio21 Institute

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The Bio21 project aims to deliver to Victoria a unique centre of excellence for innovative biopharmaceutical discovery spanning the range from basic science through to commercialisation of new discoveries.

An important component of the Bio21 project is the Bio21 Molecular Science and Biotechnology Institute, which will have a multidisciplinary R&D capability, including chemistry, biochemistry, cell biology, molecular genetics, pharmacology and in-silico biology. Construction of the attractive and functional institute building commenced in May 2002 on a site in Flemington Road, Parkville.

Ten Academic staff from the School of Chemistry and their research students will relocate to the Bio 21 Institute when it is ready for occupancy in 2004.

**More information on Bio21 can be found at <http://www.bio21.org>**



## Conferences, Workshops

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### 2002 Attendance at Conferences, Workshops, and Symposia and Special Studies Leave

<b>Ashokkumar, Dr M</b>	Sept	Attend and present a paper at the Eighth Conference of the European Society of Sonochemistry, Villasimius, Italy
	Sept	Participated at the 23rd Australian Colloids & Surface Science Student Conference, Wodonga, Australia
<b>Bedford, Ms B</b>	Nov	Invited speaker at the Inaugural World Autism Congress, Melbourne, Australia
<b>Best, Dr S</b>	Jun	Chianti Conference "2nd Chianti Electrochemical Meeting – Metal Containing Molecules", Italy
	Oct	Australian Synchrotron Workshop, The University of Melbourne
	Nov	Research work at John Innes Laboratory (part of IREX program) and to conduct experiments at Photon Factory, Tsukuba, Japan
<b>Bieske, Dr E</b>	Jan	Attend the Gordon Conference on "Molecular and Ionic Clusters", Ventura, California
	Feb	Attend Conference on Physical Chemistry, Christchurch, New Zealand
	Feb	Attend the XIIth International Symposium on Atomic, Cluster and Surface Physics, Going, Austria
	Jun	Deliver an invited talk at the Telluride Workshop on "Doped Rare Gas Clusters", Colorado, USA
	Jun	Attend the 3rd Student Conference of the RACI Physical Chemistry Division, McLaren Vale, South Australia
<b>Cooper, Dr R</b>	Jun	Deliver an invited talk at the "Fifth Asian International Seminar on Atomic and Molecular Physics", Nara, Japan
	Jun	Gordon Conference on Radiation Chemistry - 2002

# Conferences, Workshops

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<b>Gee, Dr M</b>	Feb	Special Studies at Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, USA
	Sep	Attended the 23rd Australian Colloid & Surface Science Student Conference, Wodonga, Australia
<b>Ghiggino, Prof. K</b>	Feb	Deliver lecture at RACI/NZIC Conference on Physical Chemistry, Christchurch, New Zealand
	Feb	Heads and Deans Conference, Lorne
	Apr	Faculty of Science Retreat
	Jul	RACI Physical Chemistry Student Conference, McLaren Vale, South Australia
	Nov	Chair session on fluorescence at the Australian Society for Biophysics Meeting (ASB 2002), University of Melbourne, Australia
	Nov	Attend Chemical Education Conference, Melbourne, Australia
<b>Gill, A/Prof. M</b>	Jul	14th International Conference on Organic Chemistry IUPAC/ICOS- 14, Christchurch, New Zealand
	Sep	Royal Society of Chemistry / Cambridge University Merck Lectureship Reunion – Celebrating the Chemistry of Ian Fleming, Tony Korby & Jim Staunton. University of Cambridge, UK
<b>Grieser, Prof. F</b>	Apr	Conference at Massa Marittima, Tuscany, Italy
	Apr	Faculty of Science Retreat
	Apr	Attending ESS8 Conference in Sardinia, Italy
	Jun	Attended 76th Colloid and Surface Science Symposium, Michigan, Ann Arbor, USA
	Sep	Attendance at the 23rd Australian Colloid & Surface Science Student Conference, Wodonga, Australia
<b>Huntington, Dr S</b>	Feb	Collaborative research in nanotechnology, Tsukuba, Japan
<b>Kolev, Dr S</b>	Jul	Attended and gave 2 invited talks at the FIA & Analytical Conference 2002, Noosa, Australia

## Conferences, Workshops

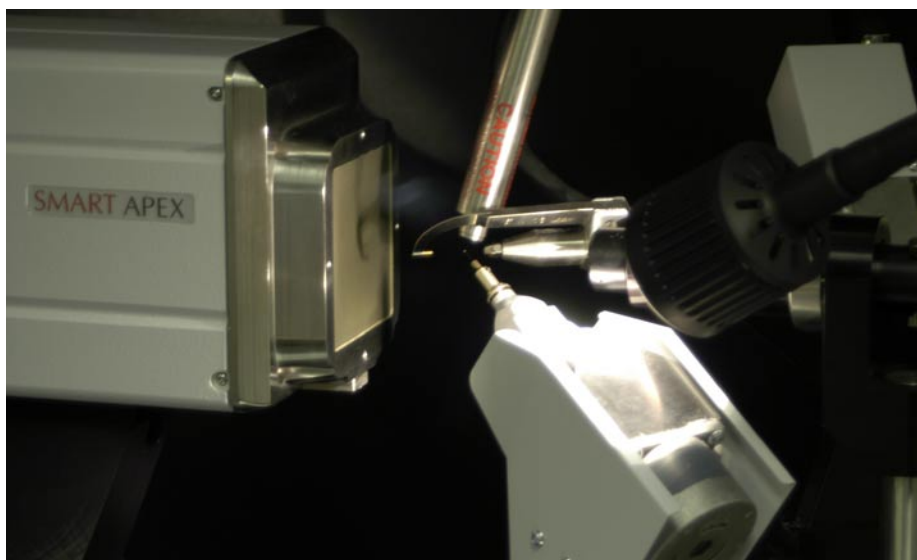
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	Sep	Attend and give an invited lecture at the 3rd Aegean Analytical Chemistry Days Conference, Lesvos, Greece
	Nov	Give an invited seminar at Deakin University, Geelong, Australia
	Dec	Attended a Workshop and Seminar organised by Deakin University in Dunkeld, Victoria, Australia
	Dec	Attended the 10th Annual Research and Development Topic 2002 Conference, Warrnambool, Victoria, Australia
<b>Larkins, Prof. F</b>	Oct	Australian Synchrotron Workshop, The University of Melbourne
<b>Mulvaney, A/Prof. P</b>	Feb	Invited lecture at ICCT 2001 conference on Nanostructures and Nanotechnology, Taipei Invited talk at "Photonics Revolution", Bad Soden, Germany
	May	Co-organizer and invited talk at NATO Meeting "Dynamics of Quantum Dot Systems"
	May	Invited seminar at Vigo University, Spain
	May	Invited talk at "Phototonics Revolution", Bad Soden, Germany
	Aug	Invited lecture "Weissenberg-Williams Lecture" at Kodak, New York
	Aug	Invited lecture at ACS Meeting, Boston, USA
	Sep	Invited talk at the 1st Australian N.T. Conference, Sydney
	Sep	Attended the 23rd Australian Colloid & Surface Science Student conference, Wodonga, Australia
	Dec	Invited talk and session chair at the SPIE Meeting, Melbourne
<b>O'Hair, Dr R</b>	Mar	Invited lecture at University of Adelaide
	Jun	Presented a talk at the 50th American Society for Mass Spectrometry Conference, Florida, USA.
	Jun	Invited lecture at the University of Colorado, USA
<b>Rizzacasa, Dr M</b>	Jan	Special Studies at Department of Chemistry and Chemical Biology, Harvard University, Cambridge, USA

## Conferences, Workshops

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	Jun	Awarded the Tasmanian Aklaloid Lectureship, University of Tasmania
	Jul	Plenary speaker at the IUPAC International Conference on Organic Synthesis, Christchurch, New Zealand
<b>Robson, Prof. R</b>	Dec	Invited lecture at Symposium at University of New South Wales
<b>Schiesser, Prof. C</b>	Apr	Present invited lecture at National University of Singapore
	Apr	Attend "Chiral Asia" Conference in Hong Kong
	Jun	Present seminar at Okayama University, Japan
	Jul	Present invited lecture at University of Kiel, Germany
	Jul	EUCHEM Conference on organic free radicals, University of York, UK
	Oct	Attend and Speak at Chiral USA Conference, Boston, USA





## Conferences, Workshops

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<b>Separovic, A/Prof. F</b>	Jan	National NMR grid meeting at University of Sydney
	Feb	Present invited lecture at Australian and New Zealand Magn Reson Conference. Taupo, New Zealand, also attend ANZMAG 2002
	Apr	Present paper at symposium – invited speaker – and attend Council Meeting of IUPAB, International Union Pure and Applied Biophysics as representative for Australian Academy of Science, Buenos Aires, Argentina
	Jun	Present invited seminar at School of Chemistry, University of Sydney
	Jul	Keynote speaker at International Analytical Chemistry Conference, Sydney (Interact 2002)
	Aug	Attend Science Prize night at Parliament House, Canberra
	Aug	Present talk at Centre for Biol. Magnetic Resonance, Goethe University, Frankfurt.
	Aug	Present paper at “Recent Innovations in Biological Solid-State NMR” at Oxford and “NMR and Liquid Crystals Symposium” at Southampton, UK
	Sep	Chair session on Macromolecular Structure at Combio 2002 and present seminar at the University of New South Wales
	Oct	Present Organic Chemistry Seminar at University of Auckland, New Zealand
	Nov	Present invited lecture at Princess Lecture Series, Victor Chang Cardiac Research Institute-symposium on “Membrane Proteins”, Sydney, New South Wales
	Nov	Presented a paper and participated at the Australian Society for biophysics Meeting (ASB 2002), University of Melbourne, Australia
	Dec	Presented and participated in NMR Workshop at University of Wollongong, New South Wales

# Conferences, Workshops

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<b>Smith, Dr T</b>	Dec	Research Collaboration Retreat, Deakin University, Geelong, Victoria
<b>Tregloan, A/Prof. P</b>	Apr	Uniserve Symposium, University of Sydney, NSW
	Sep	Ongoing collaborative research program with Professor Rudi van Eldik, University of Erlangen, Germany
	Sep	Lecture at University of Lausanne, Switzerland
	Oct	Member of University of Melbourne delegation attending Universitas Global Conference, Singapore
<b>Wedd, Prof. AG</b>	Jan	Attend Gordon Conference on Metals in Biology, Harbortown, Los Angeles, USA
	Jul	European Biophysical Inorganic Chemistry Conference (EuroBIC 6), Copenhagen, Denmark
<b>White, Dr J</b>	Jul	Attend ICOS Organic Conference, Christchurch, New Zealand
	Nov	Attend Symposium at Bristol University, U.K.
<b>Young, A/Prof. C</b>	Oct	Australian Synchrotron Workshop, The University of Melbourne
	Dec	Research work at Stanford Synchrotron Radiation Laboratories, Stanford University, California, USA

## School Seminars

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- Mar 1 Matthew D. Ronsheim, University of New Hampshire,  
“A Study of Oxonium Ylide Formation and Rearrangement  
and A Facile Synthesis of  $\alpha$ ,  $\beta$ -unsaturated- $\gamma$ -carbonyl com-  
pounds.”
- Mar 8 Professor Tom Simpson, University of Bristol,  
“Adventures with natural and “un-natural” products -  
chemistry to molecular biology”
- Mar 14 Prof. Gareth Price, University of Bath,  
“Polymer Chemistry at Ultrasonic Frequencies”
- Mar 15 Dr Roger Read, The University of New South Wales,  
“Progress in the design of fluorous taggants”
- Mar 25 Dr Markus Schatz, University of Melbourne,  
“Synthetic and kinetic investigations for the activation of  
dioxygen with copper(I) complexes with tripodal ligands”
- Mar 26 Professor Andrew Holmes, Cambridge University,  
“Pericyclic Reactions in the Synthesis of Heterocyclic  
Natural Products”
- Mar 28 Dr Spencer Williams, University of California at Berkeley  
“A tale of two enzymes: Insight into transition state differences  
between two xylanases”
- Apr 8 Ms Kylie Vincent, University of Melbourne,  
“Nitrogenase cofactor interactions with substrates and  
inhibitors”
- Apr 15 Dr Colin Rix, RMIT University,  
“Biominerals with special emphasis on teeth”
- Apr 19 Prof. Chris Easton, Australian National University,  
“Biochemical free radical reactions - towards separating fact  
from fiction”

# School Seminars

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- Apr 22 Dr Megan Maher, University of Sydney,  
“Application of X-ray crystallography to the study of metalloproteins”
- Apr 26 Joanne Ford, University of Melbourne,  
“Marine Metabolites as Potential Agrochemical Agents”
- Apr 29 Dr Guy Krippner, Prana Chemistry Laboratory,  
University of Melbourne,  
“Treatment of Alzheimer’s disease with an 8-hydroxyquinoline”
- May 3 Dr Sally Hutchison, University of Melbourne,  
“Adenosine Receptor Agonists as Potential Therapeutic Agents”
- May 6 Andrew Mariotti, University of Melbourne,  
“Recent developments in C60 chemistry”
- May 6 Michael Moylan, University of Melbourne  
“Hydrogen as a fuel”
- May 9 Tom Waters, University of Melbourne,  
“Photoelectron Spectroscopy of Gaseous Multiply Charged Anions”
- May 10 William Issa, University of Melbourne,  
“The Synthesis and Radiolabelling of novel radioimaging agents for use in Positron Emission Tomography”
- May 13 Ass. Prof. Paul Mulvaney, University of Melbourne,  
“The small world of nanocrystals”
- May 17 Professor Peter Scammells, Victorian College of Pharmacy,  
“Improved Syntheses of Pharmaceutical Opiates”
- May 20 Professor Richard Keene, University of Melbourne,  
“Stereochemical considerations in the properties and applications of polymetallic assemblies”

## School Seminars

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- May 21 Georgina Holloway, University of Melbourne,  
“Synthetic Studies on the Marine Cytotoxins Salicyli halamide  
A and B”
- May 24 Prof William Kitching, University of Queensland,  
RSC Australian Lecturer 2002,  
“The Organic Chemist in Biological Chemistry: Structure,  
Synthesis and Biosynthesis”
- May 27 Stacey Borg, University of Melbourne,  
“Redox activation of dithiolate bridged diiron complexes:  
modes of the H-cluster of Fe-only hydrogenase?”
- May 31 Caitlin Larsen, University of Melbourne,  
“Synthesis of Electrophilic Monomers for use in Ring-  
Opening Metathesis Polymerisation”
- Jun 7 Dr William Adcock, Flinders University,  
“The Origin of Diastereofacial Selectivity in Reactions  
Involving 2-Adamantyl Cations as Intermediate”
- Jun 13 Melanie Bradley, University of Melbourne,  
“The production of Latex Particles by Ultrasonically Initiated  
Emulsion Polymerisation”
- Jun 26 Dr Trevor Smith, University of Melbourne,  
“Photon-Induced Processes in Small Space and Time  
Domains”
- Jun 26 Dr Ute Wille, University of Kiel,  
“Oxygen-centred Radicals: Unexpected Reactions of Well  
Known(?) Radicals”
- Jun 27 Dr Huai Zhu, University of Queensland,  
“Constructing Inorganic Nanostructure with Novel Approach”
- Jul 4 Rohan Tronson, University of Melbourne,  
“The Effect of Surface Active Solutes on Sonoluminescence”

# School Seminars

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- Jul 29 Prof Alan Bond, Monash University,  
“Electrochemistry in ionic liquids and other media in the absence of added supporting electrolyte”
- Aug 5 Prof Hans Toftlund, University of Southern Denmark  
“Model compounds for non-heme iron proteins”
- Aug 12 Prof Martin Bennett, Australian National University
- Aug 16 Dr Spencer Williams, University of Melbourne  
“Sulfate assimilation in Mycobacterium tuberculosis”
- Aug 19 Prof Neil Barnett, Deakin University,  
“Chemiluminescence: enchanting laboratory curio or powerful analytical tool?”
- Aug 26 Dr Kevin Barnham, University of Melbourne,  
“The role of copper and zinc in Alzheimer’s disease”
- Sep 2 Dr Ian McKelvie, Monash University,  
“New generation flow analysis systems for chemical mapping in estuarine and marine waters”
- Sep 9 Prof Armin de Meijere, Georg-August-Universität Göttingen  
“Pd-Catalyzed Cascade Reactions and Ti-Mediated C, C-Bond Formations for Efficient Organic Synthesis”
- Sep 9 Dr Gerry Swiegers,  
CSIRO Division of Molecular Science,  
A new approach to artificial enzymes. A biomimetic, electrocatalytic coating for hydrogen generation from acids”
- Sep 16 Dr Stephen Best, University of Melbourne,  
“FeMoco: The next Instalment”
- Sep 27 Professor J. E. Anderson, University College London,  
“Eclipsed Conformations for Simple Saturated Bonds”

## School Seminars

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- Oct 4            Dr Mark Rizzacasa, University of Melbourne,  
“Adventures in Angstro-technology: Total Synthesis of  
Natural Products”
- Oct 7            Dr Brendan Abrahams, University of Melbourne,  
“Coordination polymers from building blocks of low  
symmetry”
- Oct 11           Anna Vrkic, University of Melbourne,  
“Gas Phase Studies of Non-Covalent Complexes by  
Tandem Mass Spectrometry and Ion-Molecule Reactions”
- Oct 14           Tim Hudson, University of Melbourne,  
“Structural aspects of metal coordination chemistry of the  
new oxy-anion of carbon, C4074-, and some related  
species”
- Oct 18           Michael Carland, University of Melbourne,  
“Synthesis of Selenium-containing Heterocycles of  
Biological Significance”
- Oct 24           Prof Ian Ritchie, Murdoch University,  
“Is Chemistry Becoming Extinct?”
- Nov 12           Dr Craig Hutton, University of Sydney,  
“Synthesis and Biosynthesis of Amino Acids”
- Nov 21           Duncan Wild, University of Melbourne,  
“Infrared Spectroscopy of Mass Selected Anion  
Clusters”

For 2002 MUCS Lecture program see website.

<http://www.chemistry.uni.melb.edu.au/news/mucs2002.html>

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