



THE UNIVERSITY OF
MELBOURNE

SCHOOL
OF
CHEMISTRY

Annual Report 2007



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Our Vision

The School of Chemistry aspires to be internationally esteemed in teaching and research, offering its staff and students a vibrant and supportive research culture, and a professional and rigorous learning environment.



INTRODUCTION FROM THE HEAD OF SCHOOL



In 2007 a major activity for the School of Chemistry was the continued planning for implementation of major curriculum changes associated with the introduction of the Melbourne Model. These changes include a completely revised course structure for the Chemistry major involving integrated core lecture and laboratory subjects at first, second and third year levels. Our Academic Programs Committee, chaired by Professor Richard O'Hair has been leading these

discussions that have involved staff at all levels. We have also been most appreciative of the advice and support from outside organizations including the Royal Australia Chemical Institute (RACI) and members of the Faculty's industry advisory group for our new changes. We have been fortunate that at the same time as these curriculum changes are being introduced, the University has provided substantial capital works funds for major refurbishment of the Chemistry buildings on the main campus. This has allowed a complete redesign and rebuilding of our teaching laboratories to accommodate the new integrated laboratory courses. Dr Hadi Lioe has been employed to assist the development of a number of new laboratory experiments that will integrate the traditional themes of analytical, inorganic, organic and physical chemistry.

The overall plan for the building refurbishment involves the relocation of the majority of research activities into a renovated East Wing while teaching spaces, offices and administration will be consolidated into the 1939 Chemistry West Building. Building work on our first year teaching laboratories began in late 2007 with scheduled completion to allow their use by the inaugural Melbourne Model student intake in 2008. This building work will be followed by the construction of a new chemistry library, student resource area, a student 'help' centre and reception area on the ground floor. Subsequent stages will see new teaching laboratories on the second and third levels for higher year students and upgraded research spaces in the East Wing. \$23 million has been provided to fund these stages over 2008-2010 with further staged improvements to occur in following years. This very substantial commitment by the University demonstrates their confidence in the important contributions that Chemistry will make to research and teaching under the Melbourne Model.

Members of the School continued to achieve success on a number of fronts. Dr Paul Donnelly was the recipient of the Faculty's Selby Research Award that will be used to assist his research as a lecturer in the School. Dr Tom Munro, who completed his PhD under the supervision of Assoc. Prof. Mark Rizzacasa, was awarded the RACI's Cornforth Medal for the most outstanding PhD submitted in chemistry nationally. Professor Frank Larkins was awarded the N N Semonov Medal in Chemical Sciences from the Russian Academy of Engineering Sciences, and Assoc. Prof. Mark Rizzacasa was jointly awarded the University's David Syme Research Prize for the best original research in the fields of biology, chemistry, geology and physics. Dr Rachel Caruso, an ARC Research Fellow in the School, was awarded a 2007 Cosmos Bright Sparks Award recognizing her as one of Australia's top 10 young scientists.

Our performance in securing research funding for projects involving staff in the School has been outstanding with \$3.3 million in new research grant funding from the ARC and other grant successes. A grant of \$6 million from the Victorian Government via its Energy Technology Innovation Strategy to a consortium led by Professor Andrew Holmes will support a major new initiative to develop new generation 'organic' solar cells. This consortium involves members of the School, CSIRO and Monash University as well as industry partners.

We were delighted to welcome to the School, Professor Rob Lamb and his research group from the University of New South Wales. Professor Lamb has been appointed Scientific Director of the Australian Synchrotron, a position he will hold with his University appointment.

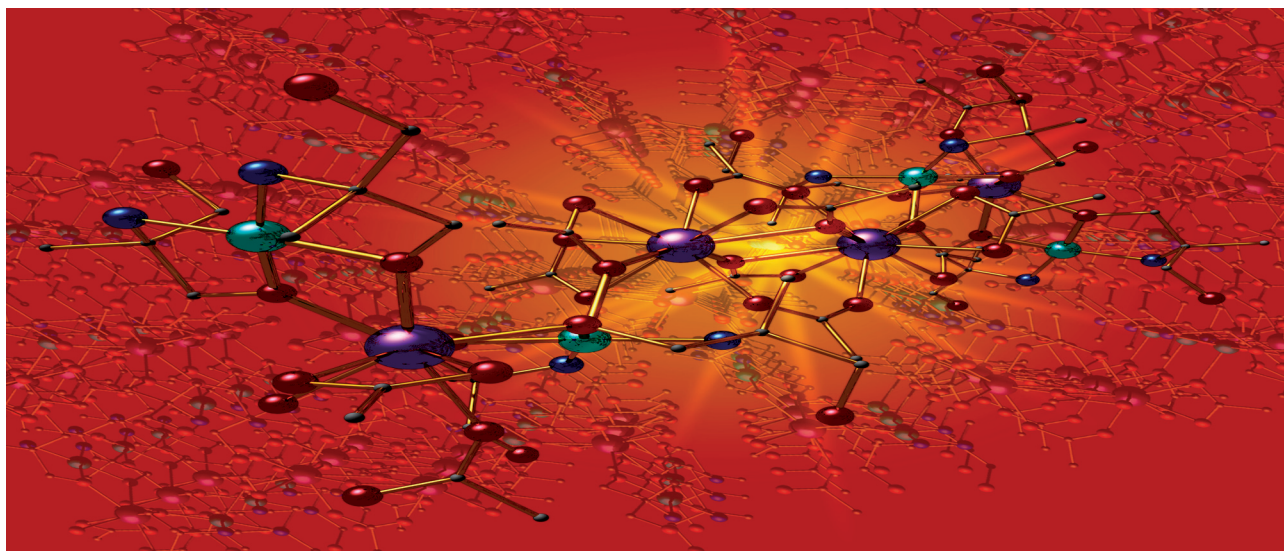
It has been a remarkably busy year again for all members of the School and I am grateful for the exceptional efforts of staff and students that have enabled us to maintain the high level of our research and teaching performance in a climate of considerable change. I am confident that our new curriculum changes and major building refurbishment will provide a strong foundation for our continued leadership in the chemical sciences.

Ken Ghigginio

Masson Professor of Chemistry and
Head, School of Chemistry



An Artists Impression of the refurbished (East Wing)
Chemistry Building (S2F Architects)



ACADEMIC STAFF

Head of School & Masson Professor

Kenneth Philip Ghiggino

Professors of Chemistry

Franz Grieser

Robert Lamb

Francis Patrick Larkins: [Deputy Vice-Chancellor, International](#)

Richard Alfred O'Hair

Carl Herbert Schiesser

Frances Separovic: [Deputy Head of School](#)

Anthony Gordon Wedd

Associate Professors and Readers

Muthupandian Ashokkumar

Evan Bieske

Michelle Louise Gee

Spas Dimitrov Kolev

Mark Anthony Rizzacasa

Trevor Alexander Smith

Jonathan Michael White

Charles Graham Young

Associate Professor

Peter Allan Tregloan

Senior Lecturers

Brendan Francis Abrahams

Stephen Best

Craig Hutton

Uta Wille

Spencer Williams

Lecturers

Colette Boskovic

Transition Teaching Fellows

Robert Charlesworth

Penelope Commons

Tutor

Sonia Horvat

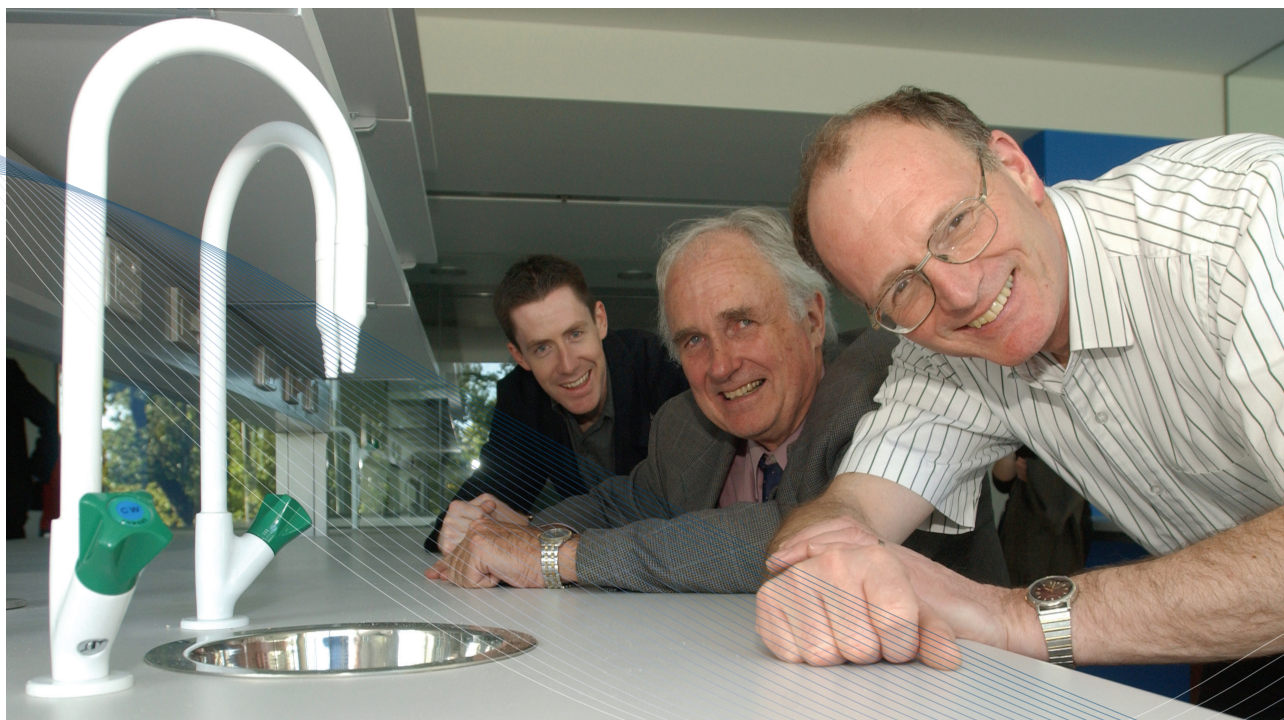
ARC Australian Federation Fellows and Professors

Andrew Bruce Holmes

Paul Mulvaney

ARC Australian Research Fellow

Rachel Caruso



Centenary Research Fellow

Toby Bell

ARC Australian Postdoctoral Fellow

Paul Donnelly

Tom Waters

Jingli Xie

Jian Chang Li

Michio Shirai

Colin Skene

Marisa Spiniello

Michelle Taylor

Hung Si Vo

Zhiguang Xiao

Meifang Zhou

VICS Chemistry Outreach Fellow

Michael Moylan

Research Fellows

Damian Bird

Pavla Bojarova

Dehong Chen

Christopher Donner

David Evans

Alison Funston

Daniel Ganame

John D. Gehman

Martin Grannas

Xiaotao Hao

Bill Hawkins

David John Jones

Parag M. Kanthale

George Khairallah

Judy Lee

Research Assistants

Tim Hudson

Firasat Hussain

Michelle Ma

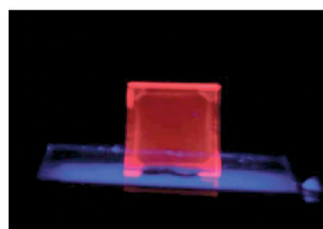
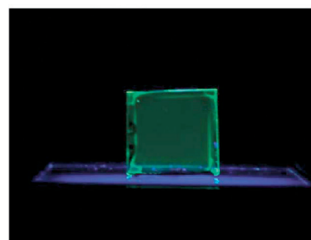
Tich Lam Nguyen

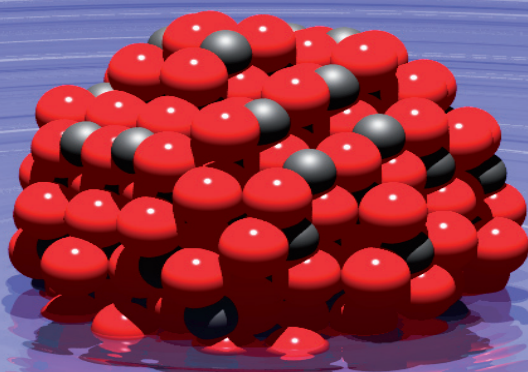
Andrea North

Natalie Pereira

Devi Sunartio

Ivan Vakarelski





HONORARY APPOINTMENTS

Professors Emeritus

Alan Buchanan
Donald William Cameron

Professorial Fellows

Richard Robson
Robert Oliver Watts

Principal Fellows

Ronald Cooper
Roger Francis Martin
William David McFadyen
Peter McTigue
Peter James Thistlethwaite

Senior Fellows

Bruce Cowie
Robert Craig
Donald Neil Furlong
Valda May McRae

Fellows

Noel Dunlop
Peter Harbour
Richard David Harcourt
Craig Hill
John Lambert
Tania Obranovich
Gerard Wilson
Jan Ramuald Zdysiewicz

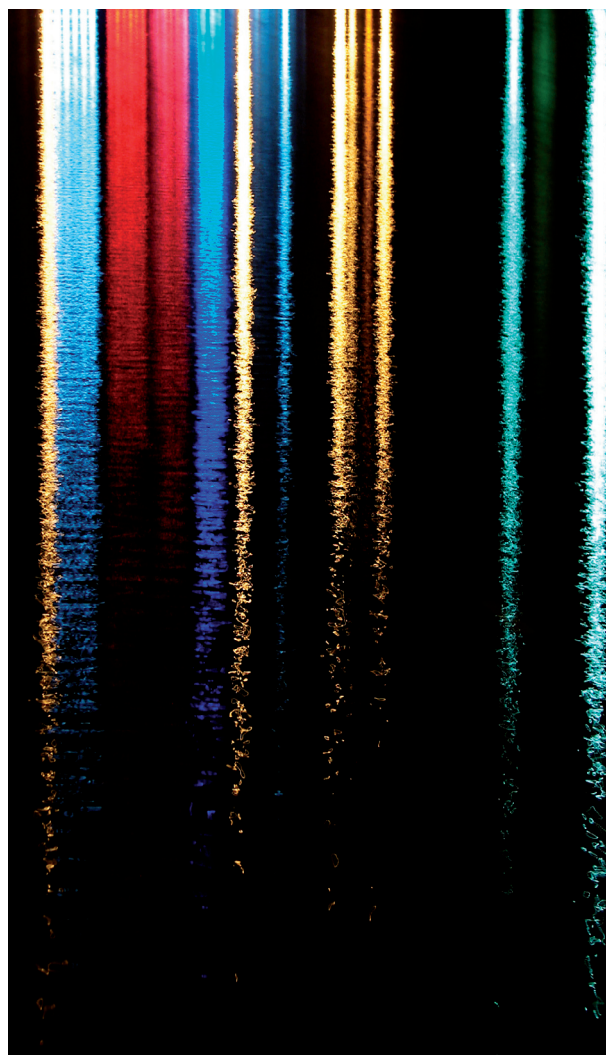
Visitors

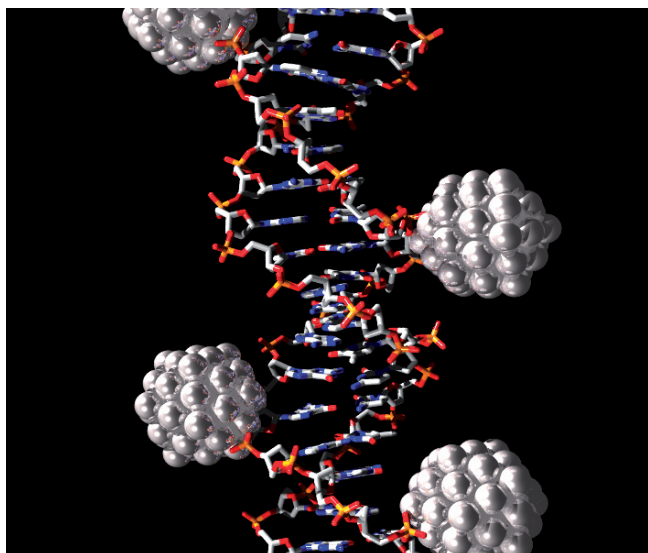
Marie-Isabel Aguilar
François Amar
Buso Dario
Rune Egdal
Sebastian Hirner
Peter Hoertz
Claire Labadens
Alessandro Martucci
Michael McNaughton
Matthew Meyer
Hamid Reza
Bo_ena Rokita
John M Sanderson
Ronald Steer
Jing-Yi Wee
Yusuke Yonamine
Sung Yong Cho
Baba Yoshinari
Shannon Zanatta
Jing Zhong
Niels Zijlstra



PROFESSIONAL STAFF

Marino Artuso
Vicki Burley
Christine Callahan
Michelle Densley
Monalisa D'souza
Fran Dynan
Jim Dynan
Gregory Ellis
Emanuele Failla
Robert Gable
Les Gamel
Francoise Gelb
Sue Hickey
Felicity Jensz
Ben Kirk
Tang-Kuan Lim (TK)
Ross Lineham
Brendan Mangan
Richard Mathys
Alf Meilak
Peter Mills
John Nuske
Des Odgers
George Papadopoulos
Jennifer Scott
Doug Taylor
Joe Tyler
Joanne Tymms
Sioe See Volaric
Jennifer Joy York: [Executive Manager](#)





PHD STUDENTS COMPLETED

Amini, Nazanin:

Thesis: *On-line determination of mercury (II) by membrane separation flow injection analysis*

Aumann, Kylee Maree:

Thesis: *Antiarrhythmic antioxidants: towards dual-action cardioprotective agents*

Bondin, Mark Ian:

Thesis: *Redox initiated structural change in iron-sulfur compounds*

Callahan, Damien Lee:

Thesis: *The coordination of nickel in hyperaccumulating plants*

Ganame, Daniel:

Thesis: *Total synthesis of (-)- Reveromycin A and synthetic studies towards Ajudazols A and B*

Goh, Yit Wooi:

Thesis: *Application of the structural correlation principle to cycloreversion reactions in Diels-Alder cycloadducts: retro Diels-Alder and cheletropic reactions*

Gomez Alvarez, Daniel Enrique:

Thesis: *Optical properties of single semiconductor nanocrystals*

Grange, Rebecca Louise:

Thesis: *Towards dual-action selenium-containing antihypertensives*

Haywood, Marissa Grace:

Thesis: *Coordination polymers and hydrogen-bonded networks of simple oxyanions*

Larsen, Caitlin Anne:

Thesis: *The synthesis and functionalisation of an electrophilic dendronised polymer*

Lioe, Hadi:

Thesis: *Gas phase fragmentation studies of amino acid and peptide ions*

Loh, Zoe Miranda:

Thesis: *Spectroscopic studies of gas phase ion-neutral interactions*

Macdougall, Phoebe Eleanor:

Thesis: *Toward the synthesis and analysis of selenium-containing glucocorticoid prodrugs*

Mariotti, Andrew Walter Anthony:

Thesis: *Electrochemistry of polyoxometalate salts in ionic liquids and other media*

Mathai, Sean:

Thesis: *The photochemistry of porphyrin phototherapy agents*

Quach, Tim:

Thesis: *Studies towards the synthesis of the ajudazols*

Radford, Alison Louise:

Thesis: *Synthesis towards selenium containing anti-inflammatory compounds*

Scholes, Colin Anthony:

Thesis: *Conformational aspects of macromolecular adsorption through evanescent wave induced spectroscopy*

Singla, Ritu:

Thesis: *Sonochemical degradation of organic pollutants in aqueous solutions*

Spizzirri, Paul Gregory:

Thesis: *Application of confocal microscopy to porphyrin photosensitisers*

Sproules, Stephen Andrew:

Thesis: *Electronic structure description of paramagnetic molybdenum and tungsten dithiolene complexes*

Trevitt, Adam John:

Thesis: *Ion trap studies of single microparticles: optical resonances and mass spectrometry*

Zammit, Steven Charles:

Thesis: *Synthesis of spiroketal and pyranoid natural products*

Zanatta, Shannon Dean:

Thesis: *Synthetic studies towards the spirofungins*

Zhang, Lianyi:

Thesis: *Molecular characterisation of the copper-binding protein COPC from pseudomonas syringae*



MAJOR ACHIEVEMENTS

Royal Australian Chemical Institute's 2007 Cornforth Medal

Dr Thomas Munro was awarded the Royal Australian Chemical Institute's 2007 Cornforth Medal for his thesis 'The Chemistry of Salvia Divinorium'. The Cornforth Medal is awarded annually for the most outstanding PhD thesis submitted in a branch of chemistry, chemical science or chemical technology. Thomas is currently a Research Fellow with the Harvard Medical School, investigating new treatments for psychiatric illnesses at McLean Hospital. Congratulations to Thomas and to Associate Professor Mark Rizzacasa, who supervised the thesis.

Prestigious award for Professor Frank Larkins

Professor Frank Larkins was awarded the Russian Academy of Engineering Sciences, N N Semenov Medal in Chemical Sciences, for 2007. This is the highest award of the A. M. Prokhorov Academy of Engineering Sciences (AES), Russia. Prof. Larkins is Deputy Vice Chancellor (International) at the University of Melbourne and a Professor of Chemistry in the School.

Melbourne Research a Highlight of International Conference on Biological Inorganic Chemistry

Staff and students from the School of Chemistry were active participants at the 13th International Conference on Biological inorganic Chemistry, held in Vienna from 15-20th July. Staff delegates included Prof. Tony Wedd (a member of the conference's International Organizing Committee), Assoc. Prof. Charles Young and Dr Stephen Best and Dr Paul Donnelly. New results in the areas of Cu/Zn transport (Wedd), Mo/Cu carbon monoxide dehydrogenase chemistry (Young), FeFe hydrogenase chemistry (Best) and Cu-based Alzheimer's drugs (Donnelly) were presented. Past and present Ph.D. students Karrera Djoko, Melissa Koay, Stephen Sproules and Mathais Zimmermann attended and presented oral or poster presentations on their research. Melissa and Stephen are currently research scientists at the Max Planck Institute for Bioinorganic Chemistry in Mülheim, Germany. The conference was attended by over 900 scientists from over 55 countries; the University of Melbourne contingent was the strongest from any Australian University.

Organic Solar Cell Consortium

A consortium of researchers from the School of Chemistry, Monash University, CSIRO and a number of industries, led by Professor Andrew Holmes, received \$6M from the Victorian Government under its Energy Technology Innovation Strategy to develop prototypes of new generation 'organic' solar cells. Details are available at www.vicosc.unimelb.edu.au.

Public Lecture; Scientists and Public Responsibility

The Science Faculty and the School of Chemistry hosted a public lecture on 8 August by Miegunyah Fellow, Professor Purnendu K Dasgupta, Professor and Chair, Department of Chemistry and Biochemistry, University of Texas at Arlington, USA.

Opening of Bio21 Institute Chemical Synthesis Laboratory

Professor Richard R Schrock of MIT, co-recipient of the 2005 Nobel Prize in Chemistry, officially opened the Chemical Synthesis Laboratory of Professor Andrew Holmes at the University of Melbourne's Bio21 Institute on Friday 2 February, 2007. A guest of the University as its Distinguished Bio21 Lecturer in Chemistry, Professor Schrock also delivered two public lectures during his visit. Minister for Innovation the Hon. John Brumby and University of Melbourne Vice-Chancellor Professor Glyn Davis, also spoke at the laboratory opening.

Graduate Destinations

Our PhD graduates continue to find employment in leading laboratories around the world. These include: Dr Christian Doonan, who took up a position with leading supramolecular chemist Prof. Omar Yaghi at the University of California Los Angeles. Earlier in the year Dr Michael Malarek, joined the group of Prof. Robert Grubbs at the California Institute of Technology. Prof. Grubbs shared the 2005 Nobel Prize in Chemistry for the development of metathesis methods in organic chemistry. Dr Stephen Sproules, joined the group of Prof. Karl Wieghardt, who heads the Max Planck Institute for Bioinorganic Chemistry, Mülheim. Dr Lyndal Hill, is continuing a productive post-doctoral appointment in the group of Prof. Bill Tolman, Distinguished McKnight University and L.I. Smith Professor of Chemistry at the University of Minnesota.

2007 Selby Research Award

Dr Paul Donnelly received the Faculty of Science 2007 Selby Research Award. This award is provided by the Selby Scientific Foundation to support an early career researcher in chemistry and related disciplines. The award is valued at \$13,500 and Dr Donnelly intends to use the funds to further his research into metal based drugs.



International Linkages

Dr Craig Hutton was awarded, jointly with Dr Matt Perugini from the Department of Biochemistry and Molecular Biology, an ARC Linkage International Award to support a multi-disciplinary research program with our collaborators in New Zealand.

"With antibiotic resistance on the rise, there is an urgent need to develop new antibiotics with novel modes of action. This project aims to generate new drug candidates that target dihydrodipicolinate synthase (DHDPS) - the first enzyme in the synthesis of the bacterial cell wall - using a triple-pronged approach. This novel approach will allow for the development of new drugs to treat a range of pathogenic bacteria, including 'Golden Staph'."

Associate Professor Mark Rizzacasa, a joint recipient of the David Syme Research Prize

This prize is awarded for original research work in the fields of biology, chemistry, geology or physics. The prize consists of a bronze medallion and cash award which was presented by the Dean of Science at the Dean's Award Ceremony on May 16.

The Rizzacasa group is currently undertaking research in organic synthesis of biological active natural products including anti-cholesterol, anti-tumour and anti-fungal molecules. It is hoped that their research will result in the synthesis of compounds for use in the treatment of various diseases.

Stranks Award for best student presentation at Inorganic Chemistry

Craig Gourlay received a Stranks Award for best student presentation at the recent Conference of the Inorganic Division of the RACI and the Inorganic and Organometallic Specialist Group of the NZIC (Inorganic Chemistry 2007) in Hobart. Craig's talk, entitled "Structural Models for the CO Dehydrogenase Active Site," described the synthesis of new Mo-S-Cu complexes and their interrogation by a variety of structural and advanced spectroscopic techniques.

Bright Sparks Award

Dr Rachel Caruso was awarded a 2007 Cosmos Bright Sparks Award in recognition of her outstanding work. She is included by the Cosmos Science magazine in its list of Top 10 Young Scientists.

Publication Highlights

The paper entitled "Separation of cobalt(II) from nickel(II) by solid-phase extraction into Aliquat 336 chloride immobilized in poly(vinyl chloride)", Associate Professor Spas Kolev and colleagues published in *Talanta* (Elsevier), was the most downloaded paper for the period April - June, 2007.

Talanta, Volume 71, Issue 1, 1 January 2007, Pages 419-423 Blitz-Raith, A.H.; Paimin, R.; Cattrall, R.W.; Kolev, S.D.

"Down memory lane: the sixties in the Chemistry School, University of Melbourne", an article written by our resident Chemistry historian, Dr Valda McRae, was published in the August edition of *Chemistry in Australia*. This article gives the reader a foretaste of the content of her current project "Chemistry @ Melbourne 1960 - 2000," a book on the history of the Chemistry School, to be published in 2008.

A special edition of *Aust J Chem*, volume 60, No7 had a number of contributions from the Mulvaney group. Paul Mulvaney was the guest editor, and Joel van Embden had a feature article "Review of the Synthetic Chemistry Involved in the Production of Core/Shell Semiconductor Nanocrystals"



Melbourne University Chemical Society (MUCS) 2007

Committee:

President: Colette Boskovic

Secretary: Toby Bell

Treasurer: Alison Funston

Student representatives: Karrera Djoko, Nick FitzGerald, Joel Hooper, Carolina Novo, Kristine Tan, Andrew Rapson

The 2007 lecture series featured 11 presentations, by high profile Australian and overseas based guest speakers, including several of the School's own alumni. These presentations covered many different aspects of chemistry and science in general. We thank Lastek, the Australian Journal of Chemistry and Blake Dawson Waldron Patent Services for their generous support of the lecture series.

For the 2007 MUCS Lecture program see the following website:

<http://www.chemistry.unimelb.edu.au/news/mucs/mucs2007.php>

The Chemistry Postgraduate Society Committee for 2007 were:

President: Maree Staples

Secretary: Ann Gooding

Treasurer: Fern Lim

Staff Representative: Vicki Burley

General Committee:

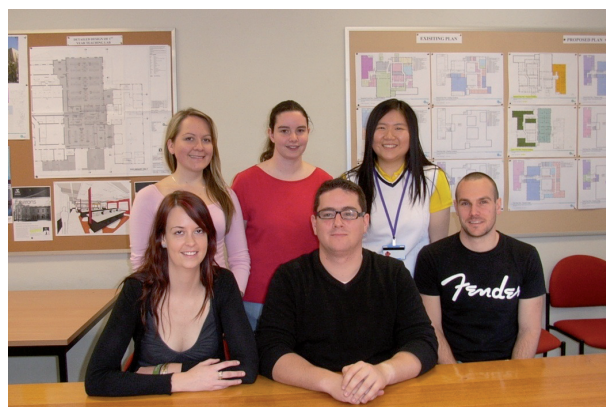
Laura Mc Cormick

Lachlan Mc Kimmie

Alex St John

Corin Storkey

(See picture below)



L-R. Back Row: Maree Staples, Laura Mc Cormick, Fern Lim

L-R. Seated: Ann Gooding, Alex St John, Lachlan Mc Kimmie

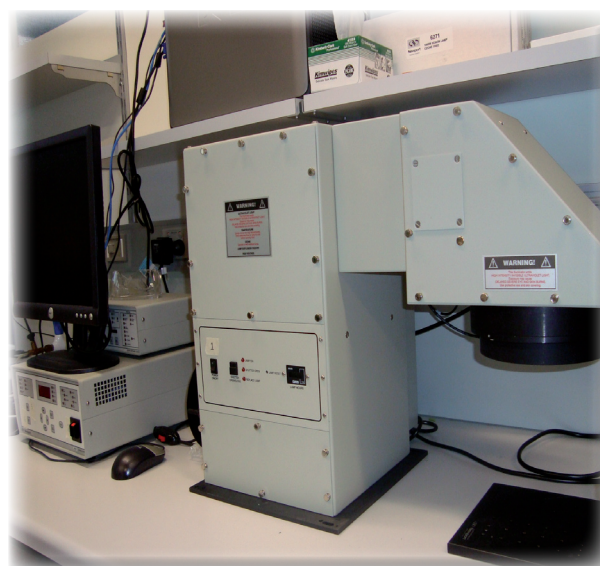
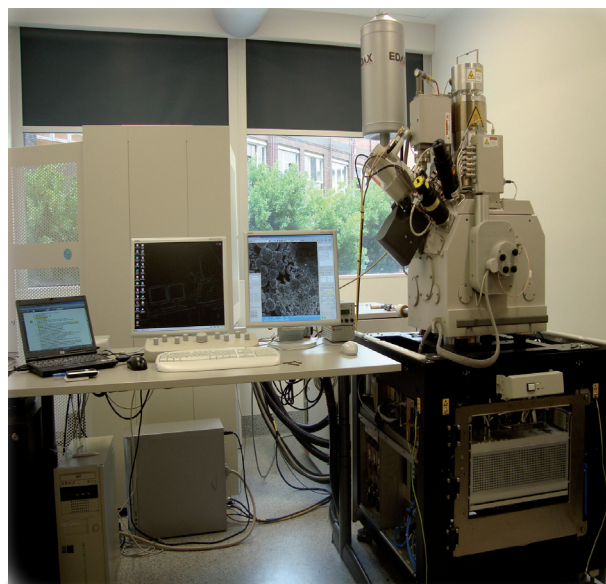
RESEARCH FUNDING

New Grants

The School of Chemistry performed strongly in 2007 receiving almost \$2.12M in new funding in the form of ARC Discovery Project Grants. This competitive funding included support for research into pathogenic organisms (Dr S Williams), total synthesis of natural products (Assoc. Prof. M. Rizzacasa), radiopharmaceuticals (Dr P. Donnelly), carbenium ion chemistry (Assoc. Prof. J. White), and photocatalysis for water oxidation (Dr J. Xie). Chemistry staff were also co-investigators on several further ARC Discovery Project grants worth some \$1.13m that involve sonoprocessing (Assoc. Prof. M Ashokkumar), enzyme reactions (Dr C. Hutton) and mitogenic signalling proteins (Prof. A. Holmes).

The School also had considerable success with large infrastructure (LIEF) projects, securing \$304,000 towards expansion of the School's X-ray Molecular Structure Elucidation Facility (MSEF) (Assoc. Prof. J. White) and \$500,000 for a NovaLab Focussed Ion Beam for nanoscale lithography (Prof. P. Mulvaney). Chemistry staff were co-investigators on a further LIEF Grant of \$500,000 for a national biomedical electron paramagnetic resonance and molecular imaging centre (Assoc. Prof. C. Young & Dr S. Best).

Other grants received included \$6.1M from the Victorian State Government to Professor Andrew Holmes for the Victorian Organic Solar Cell Consortium.





VICTORIAN INSTITUTE FOR CHEMICAL SCIENCES (VICS)

The Victorian Institute for Chemical Sciences (VICS) was established by Melbourne, Monash and RMIT Universities in 2003 with the objective to advance the chemical sciences in Victoria. VICS has activities in four areas to benefit the three member universities:

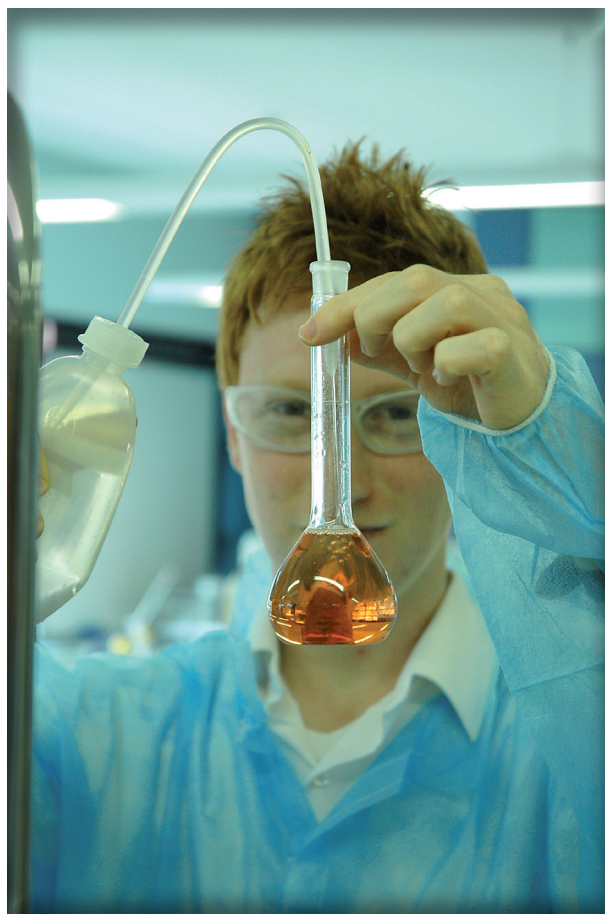
- » to bring distinguished Chemist visitors to Melbourne
- » promote collaboration with industry,
- » to support major Chemistry initiatives that benefit the three universities
- » educating and promoting Chemistry to the next generation of chemists.

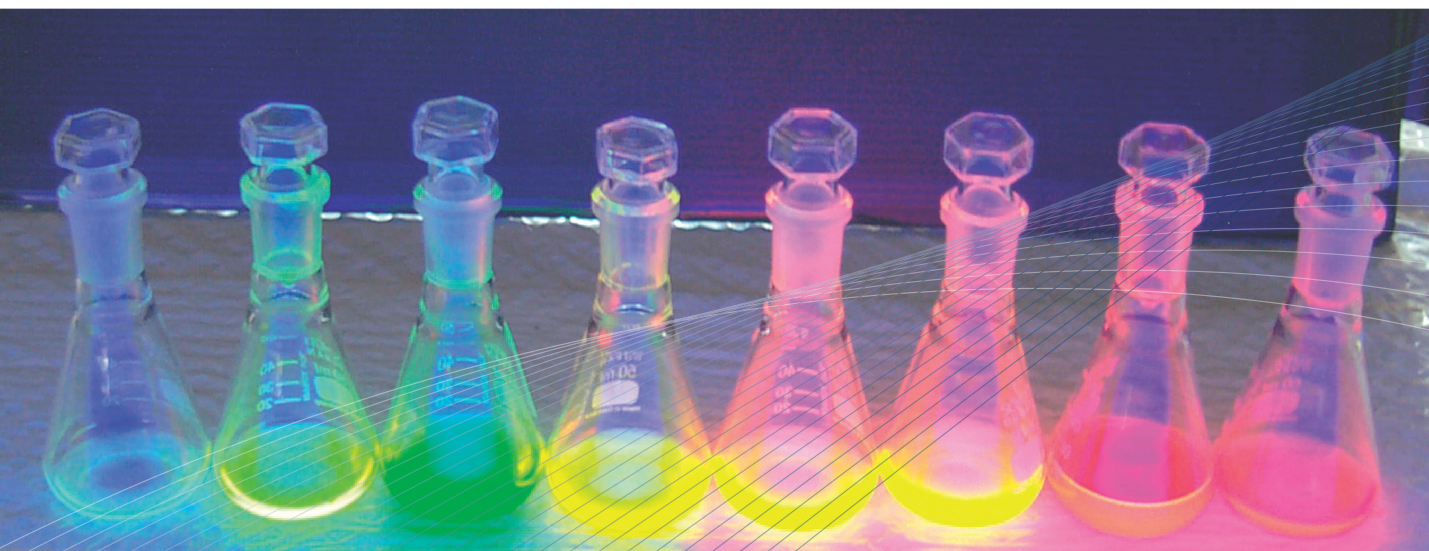
Postgraduate students from the three universities filled the foyer of the Bio21 Institute on 29 October, 2007 for the inaugural VICS Industry Night. The students displayed more than 100 research posters to share their work with VICS' commercial partners and the Victorian Minister for Innovation, Hon. Gavin Jennings, who opened the night.

2007 has been the busiest year yet for the VICS Outreach Program. More than 20,000 students measured the amount of caffeine in soft drinks, looked at the fat found in shortbread biscuits, solved crimes and put the scientific method into practice. The program, which operates in conjunction with CSIRO Education, runs curriculum linked, hands-on, fun chemistry activities in schools throughout Victoria for students between Grade prep to Year 12.

Information about VICS and its programs can be obtained by telephone (03) 8344 3949 or email vics-enquiries@unimelb.edu.au

Alternatively, visit the website www.vicsco.com.au





SCHOOL SEMINARS

Organic Chemistry Seminar Program	
January 23	Professor John Murphy, University of Strathclyde "Nitrogen-containing functional groups-a diverse and flexible family"
January 25	Professor Chris Braddock, Imperial College. "Towards a biosynthetically-inspired chemical synthesis of the obtusallenes"
February 16	Dr John Sanderson, Durham University "Self-assembling systems for studying protein-lipid interactions"
March 2	Dr Matthew Fuchter, CSIRO Molecular & Health Technologies "From cancer therapy to catalysis: multi-faceted macrocycles"
March 9	Berin Boughton, PhD swansong "Rational design of inhibitors of dihydrodipicolinate synthase"
April 16	Tina Tan, PhD swansong. "Synthesis and photophysics of water-soluble PPVs"
April 20	Leigh Ford, PhD swansong "Boron : a useful element for radical reductions"
April 27	Sung Yong Cho, PhD swansong "Seeing the light: understanding polyfluorenes"
May 11	Jacinta Watt, PhD swansong "Oligomannosides as probes for Mycobacterium tuberculosis cell wall biosynthesis"
May 25	Professor Steven Langford, Monash University "Concept transfers from Materials to Medicine"
May 28	Karen Loft, PhD swansong "Synthesis of sulfated carbohydrates for the study of carbohydrate sulfatases"
June 8	Emma Denehy, PhD swansong "Aspects of sulfonyl and phosphonyl group electronic structure and group transfer reactions"
June 15	Chris Barlow, PhD swansong. "The search for gas phase peptide radicals"
June 18	Professor Rob Capon, University of Queensland "Biodiscovery in brisbane: exploring new biomolecular space"
June 29	Professor Mogens Brøndsted Nielsen, University of Copenhagen "Acetylenic scaffolding with tetrathiafulvalenes and azulenes: Synthesis of novel components for molecular electronics"
July 2	Dr Paul Clarke, University of York "Something from nothing: adventures in homochirality and total synthesis"



July 6	Dr Jayanta K. Ray, Indian Institute of Technology "Use of halo vinyl aldehydes in organic synthesis & chemoselective transformations of α -lactams"
July 13	Professor K C Nicolaou, Scripps Research Institute "Chemistry, biology and medicine of natural products"
July 20	Professor Masataka Ihara, Hoshi University "Cascade reactions under multiple conditions: effective syntheses of biologically active compounds"
July 23	Professor Jan Bergman, Karolinska Institute "Nitrogen heterocyclic compounds as drugs and as tools in the study of physiological mechanisms"
July 27	Professor Steve Bull, University of Bath "Temporary stereocentres, self-assembling chiral derivatising agents and thermostable aldolases - a mixed bag of new methodology for asymmetric synthesis"
August 3	Professor Rick Danheiser, Massachusetts Institute of Technology "Organic synthesis in supercritical carbon dioxide and related environmentally friendly media"
August 31	Dr Aaron Micallef, University of Queensland "Nitroxide-annulated phthalocyanines: towards spin-mediated photochemistry and new photoactive materials"
September 14	Professor Howard Colquhoun, University of Reading "Supramolecular recognition of digital information in linear macromolecules"
September 21	Dr Annie Pollex, Technische Universität Dresden "Viridifungins and Xeniolide F: Target oriented synthesis via rearrangement reactions"
September 28	Dr Bill Hawkins, University of Wollongong "Strategies toward fullerene amino acid derivatives"
October 5	Nathan Fifer, PhD swansong "Towards the synthesis of ustiloxin A"
October 12	Dr Peter Rutledge, University of Sydney "Biologically inspired chemistry: new strategies for metal binding and hydrocarbon oxidation".
October 16	Dr Gavin Reid, Michigan State University "Chemical methods for selective proteome analysis"
October 19	Dr Jörg Taubitz, Universität Kiel "Preorganized binding motifs for molecular recognition by four hydrogen bonds"
October 26	Peter Kaiser, PhD swansong "Amino acid synthesis using organoboron reagents"
November 2	Shinn Dee Yeoh, PhD swansong "Application of structural correlation principles in the study of rearrangement reactions"

Inorganic & Analytical Chemistry Seminar Program

March 5	Dr P. Donnelly, University of Melbourne "Metal ions and Alzheimer's disease"
March 12	Dr F. Hussain, University of Melbourne "Polyoxometalates and nanostructures"
March 19	Mr D. Callahan, University of Melbourne "The coordination of nickel in hyperaccumulating plants"
March 26	Dr K. Vincent, University of Oxford "Electricity from low-level H ₂ in still air - an ultimate test for an oxygen- tolerant hydrogenase"
April 2	Dr W. Wong, University of Melbourne "Transition metal dithiocarbamate receptors and assemblies"
April 16	Mr M. Cheah, University of Melbourne "Hydrogen activation by FeFe-hydrogenase: experiment, theory and small molecule chemistry"
April 23	Prof. C. Jones, Monash University "Group 13 MI heterocycles: metal donor Lewis bases and N-Heterocyclic carbene analogues"
April 30	Prof. L. Spiccia Monash University "Biomimetic transition metal complexes"
May 7	Prof. M. Adams, RMIT University "Multivariate curve resolution and correlation analysis of dynamic spectral profiles"
May 14	Mr Y. Mulyana, University of Melbourne "Supramolecular chemistry of macrocyclic ligands"
May 14	Ms C. Lomonte, University of Melbourne "Chemical reduction and determination of disulfide bonds in proteins "
May 17	Dr Evan Moore, University of California. (Joint with Physical Chemistry Seminar Program) "Spectroscopic characterization of luminescent 1,2-HOPO LnIII chelates"
May 21	Mr N. FitzGerald, University of Melbourne "Solid state lighting and the future of illumination"
May 21	Mr V. Ng, University of Melbourne "Applications of chromium reagents in organic synthesis and catalysis"
July 30	Prof. C. Hill, VICS Distinguished Visitor; Emory University, USA "Structures, bonding and reactivity in polyoxometalates. Lessons for metal oxide-based science and technology"
August 6	Prof. Purnendu Dasgupta, Miegunyah Distinguished Visiting Fellow: University of Texas, USA "Environmental perchlorate: Where are we now?"
August 13	Dr Ayam Nafady, Monash University "Design and fabrication of morphology-tunable crystalline materials: M[TCNQ] ₂ Molecular Magnets M = Mn, Fe, Co, Ni"
August 20	Mr Craig Goulay, University of Melbourne "Heterobimetallic molybdenum-copper complexes: synthetic analogues for the active site of carbon monoxide dehydrogenase"
August 27	Prof. Cameron Kepert, University of Sydney "Nanoporous coordination framework materials: electronic switching, magnetism and Chirality"
September 3	Dr Jingli Xie, University of Melbourne "Magnetic diversity based on molecular solids containing [Mmnt ₂] anions mnt = maleonitriledithiolato: experimental and theoretical studies"
September 10	Ms Michelle Ma, University of Melbourne "Polyoxometalate anions: challenges of molecular characterisation"
September 10	Assoc. Prof. Charles Young, University of Melbourne Novel organosulfur ligands from the reactions of metal complexes with alkynes"
October 1	Professor Samuel Adeloju, Monash University Gippsland Campus "Composite and nanocomposite biosensors"
October 8	Ms Penny Commons, University of Melbourne "VCE Chemistry 2008"
October 8	Mr Michael Moylan, University of Melbourne "The VICS outreach program"

Physical Chemistry Seminar Program

March 15	Professor Dr Michael Grunze, University of Heidelberg "Biological' surface science".
March 29	Professor Mark S. Gordon, Iowa State University "Intermolecular Forces: Theory and applications".
April 5	Zoe Loh, University of Melbourne "Spectroscopic studies of gas phase ion-neutral interactions"
April 19	Barney Ellison, University of Colorado "Measurement of bond energies of organic molecules via ion chemistry/spectroscopy"
April 26	Paul M. Meyer, University of Ottawa "The secret lives of gas-phase radical cations"
May 10	Professor Alan Bond, Monash University "Electrochemistry in ionic Liquids"
May 17	Dr Evan G. Moore, University of California. (Joint with Inorganic & Analytical Chemistry Seminar) "Spectroscopic characterization of luminescent 1,2-HOPO Ln(III) chelates"
May 24	Paul Spizzirri, University of Melbourne "Applications of confocal microscopy to porphyrin photosensitisers"
July 5	Associate Professor Francois Amar, University of Maine "Simulation studies of heterogenous Van der Waals nanoclusters"
July 13	Professor F Luis M. Liz-Marzan, Universidade de Vigo. "Morphology control through colloidal synthesis of metallic nanoparticles"
July 19	Joel van Embden, University of Melbourne "Synthesis and optical properties of CdSe core and core-shell semiconductor nanocrystals"
July 26	Professor David Buckingham FRS, Cambridge University "Chirality in NMR spectroscopy"
August 9	Professor Robert Lamb, University of Melbourne "Making non stick surfaces through manipulating nanoscale roughness - Is this nanotechnology"
August 23	Professor Tossy Nagamura, Kyushu University "Organic, inorganic and natural nanomaterials for achieving specific functionality"
August 30	Professor Tossy Nagamura, Kyushu University "Novel polymers showing absorption changes in broad wavelength region due to single electron transfer between ion pairs and their guided wave mode applications"
September 6	Professor John White, Australian National University "The structure of emulsions"
October 4	Dr Xiao Tao Hao, University of Melbourne "Probing and controlling the electron density distributed outside the conjugated polymer surface"
October 11	Prof. Peter Loyson, Nelson Mandela Metropolitan University "The influence of ancient Greek on chemical terminology and the English Language"
October 18	Scott McLean, University of Melbourne "Interactions between the surface-adsorbed pH-tunable di-block copolymer poly(2-vinylpyridine)-poly(ethylene oxide)"
October 25	Jacek Jaroslaw Jasieniak, University of Melbourne "A look into the world of II-VI semiconductor quantum dots: their synthesis, characterization and application"
November 8	Christian Staberhofer, University of Melbourne "Photopolymerization of dimethacrylates"
November 22	Sabina Zahirovic, University of Melbourne. "Dynamic interfacial tension and rheology of highly concentrated explosive emulsions"
December 6	Professor Jaroslav Sestak, Academy of Sciences, Prague "Bulk and mesoscopic thermodynamics and thermal studies of inorganic materials utilized for bone tissue implantation"



PUBLICATIONS

Textbooks

Blackmann A, Bottle S, Mocerino M, Schmid S & Wille U. 2007. Chemistry Australasia. Brisbane, Australia: Wiley - John Wiley & Sons.

Research Book Chapters

Ashokkumar M & Mason. 2007. Sonochemistry. Encyclopedia of Chemical Technology. United States: John Wiley & Sons, pp. 0-30.

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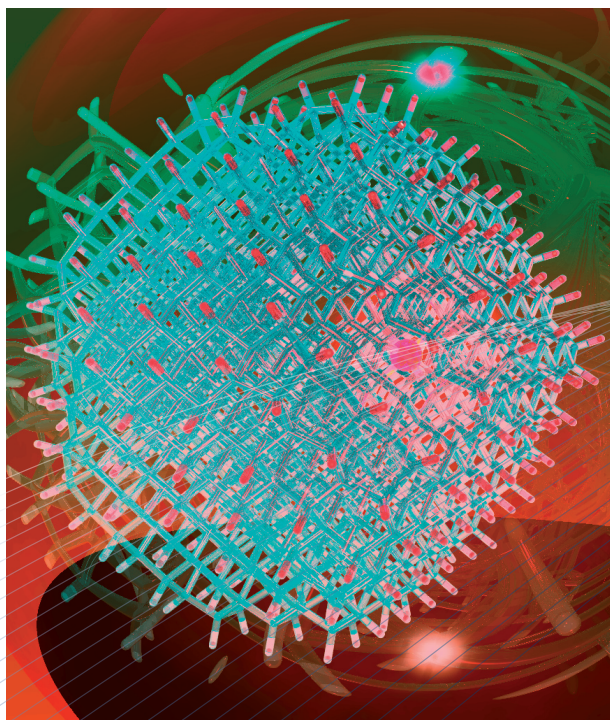
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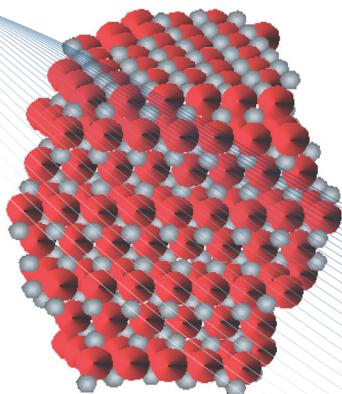
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CdSe Nanocrystal (≈ 200 atoms)



2 nm

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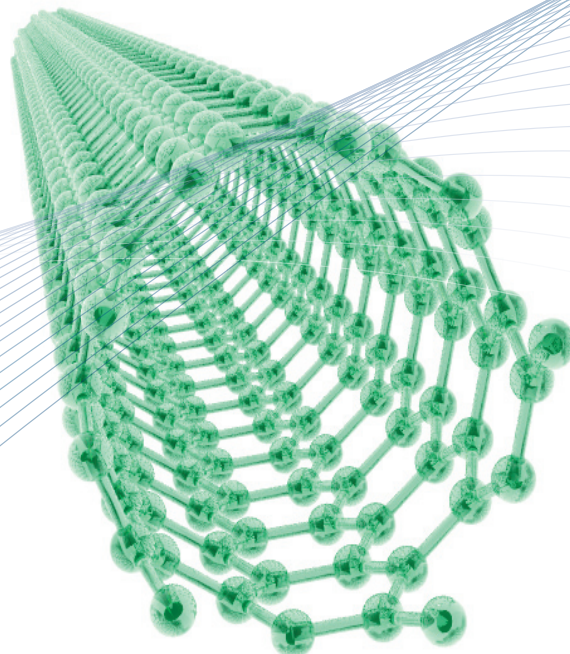
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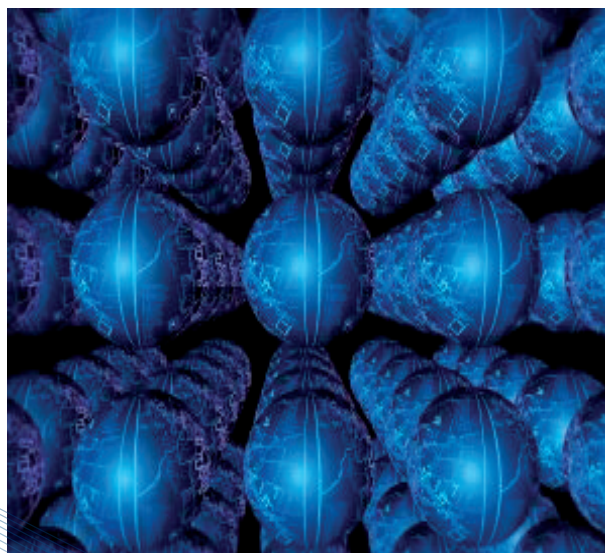
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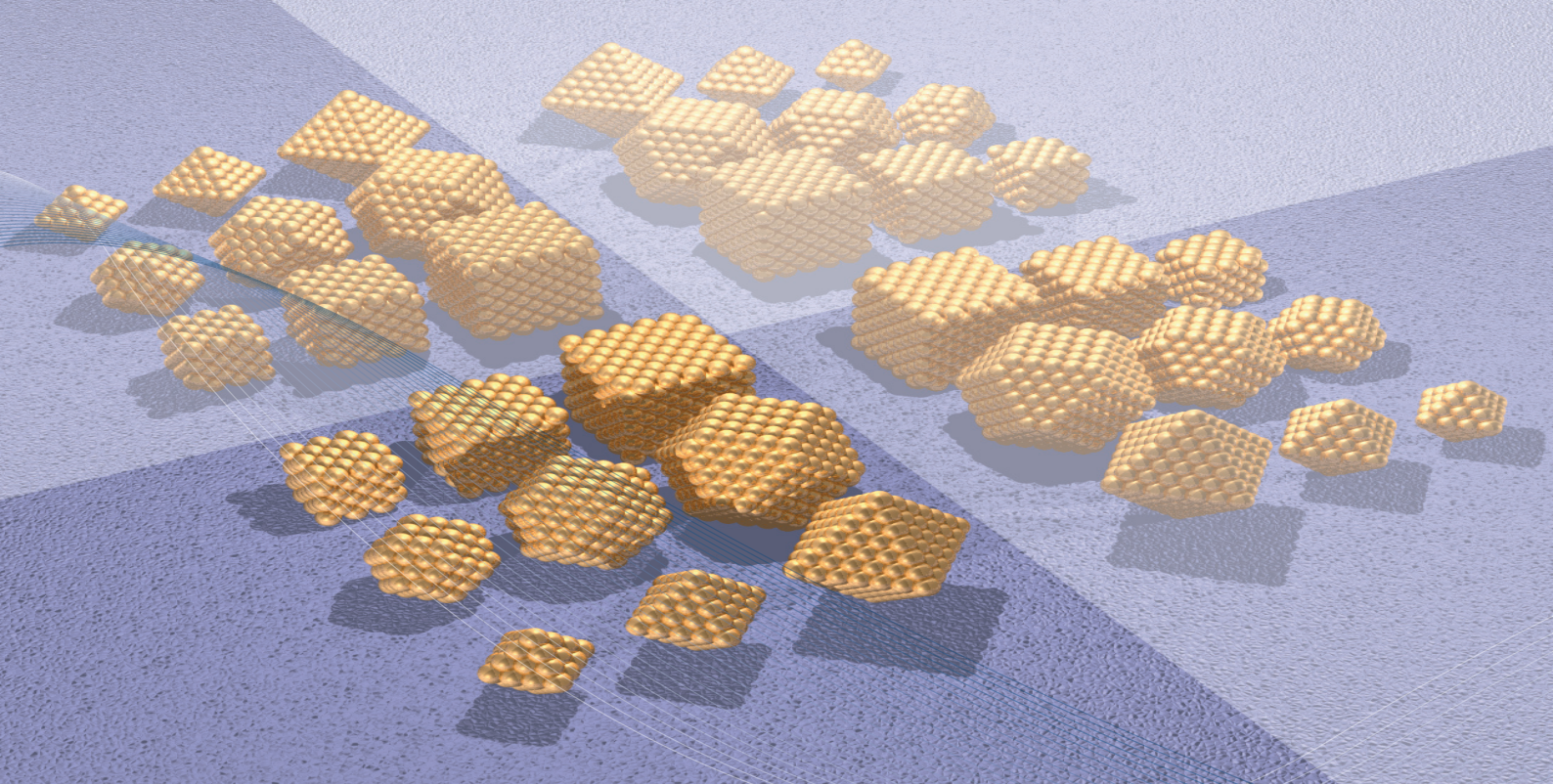
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