



In Coherence

April 2007

Newsletter for ARC Centre of Excellence for Coherent X-Ray Science

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Coming Events

MPG 2007: Melbourne Protein

Group Sixth Symposium

Thursday 19th July 2007

Institute of Advanced Study

La Trobe University

www.lorneproteins.org/mpg.htm

Theoretical Studies of Scattering,

Structure & Dynamics in

Electronic Systems Workshop

Monday 28th May 2007

Physics Podium

The University of Melbourne

see page 3 for further details.

Annual Workshop Success!

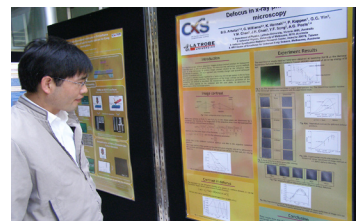
Rosslyn Ball reports on just how well physicists and biologists worked together at the CXS 2nd Annual Workshop.

Over 130 guests from across the globe attended the CXS 2nd Annual Workshop 2007 held at the BIO21 Institute in Parkville, Melbourne from 11 - 14th April 2007. The event was organised by representatives from all nodes of CXS and was supported by the Australian Research Council, Australian Synchrotron, Elettra, the Abdus Salam International Centre for Theoretical Physics, the Molecular and Materials Structure Network and the State Government of Victoria.

Presenters and guests spent three days exchanging ideas and learning the latest on high resolution X-ray imaging of biological samples using synchrotron, high harmonic generation laser and X-ray free laser sources.

A number of highly successful poster and drinks sessions were held throughout the event providing participants the opportunity to meet other like-minded researchers or catch up with old friends.

Other highlights of the workshop included a well attended tour of the Australian Synchrotron where visitors were able to see Australia's world class synchrotron facility in Clayton first hand; and the holding of the 3rd Italy-Australia Workshop "Future Directions in Spectroscopy and Imaging with Synchrotron Light: New Sources", attended by 40 scientists at the Australian Synchrotron on 14 April 2007.



Poster Viewing at the CXS 2nd Annual Workshop

With a wealth of information received at the workshop there is no question that guests walked away with a lot to think about. As a result a number of topics and links will be addressed by CXS members in the coming months.

The workshop dinner was held at the Royal Melbourne Zoo on the Wednesday evening. This event hosted 70 people who enjoyed a fun evening with toasts by the many nationalities present. Several guests will be sure to remember fighting off a colony of bats upon their arrival and a few lucky people will appreciate catching a glimpse of the zoo's lone duck out the front of the Rainforest room!



Guests enjoying the wonderful lunches provided at the Annual Workshop

CXS would like to thank all our presenters, guests, co-ordinators, venue staff and caterers for their contribution towards the success of the workshop. Special thanks also goes out to the superb efforts of the organising committee, comprising Emma Douglas, Andrew Peele, Tania Smith, Mike Ryan, Leann Tilley and Steve Wilkins, whose hard work helped make this workshop a memorable one.

Lots to Talk About in Imaging and Spectroscopy



The New Ultra-Fast
Laser housed at Swinburne
University of Technology

A workshop on Imaging and Spectroscopy of Biological Materials was hosted by the Short Wavelength Laser Source Program at Swinburne University of Technology on 22nd March 2007.

This highly successful workshop concentrated on the following areas:

- Ultra-short Laser/High Harmonic Generation
- Advances in High Harmonic Generation
- High Field/Material Iterations
- Time-resolved Spectroscopy
- Microscopy
- Fluorescence Techniques in Biology

This combination of talks focused on experimental and theoretical laser physics and its application to

biological science; in particular fluorescence imaging in biosciences.

A tour of the new Ultra-Fast Laser System Laboratory was also conducted, with participants being introduced to the laser's translation stages, the XUV monochromator and CCD camera package.

Extensive discussion sessions were generated, both during and after the workshop, and there is a positive indication that this will flow into many areas of CXS work.

In Brief

Publications:

Publications for this quarter include:

Hard X-ray Phase-Contrast Imaging for Medical Applications - Physicist's Dream or Radiologist's Mainstream?

S.W. Wilkins, T.E. Gureyev, S.C. Mayo, Ya.I. Nesterets, D.M. Paganin, A.Pogany and A.W. Stevenson Published online *AIP Conference Proceedings* 902, 33-36 (2007).

Coherent Diffractive Imaging and Partial Coherence G.J. Williams, H.M. Quiney, A.G. Peele, K.A. Nugent *Physical Review B*, 2007

Ultrafast Carrier Dynamics of Si Quantum Dots Embedded in SiN Matrix. L.V. Dao, J. Davis, P. Hannaford, Y.Cho, M.A. Green, E. Cho *Appl. Phys. Lett.* 90, 081105 (2007)

CXS Visitors:

In February 2007 CXS La Trobe University had the pleasure of hosting a visit by Michael Feser, Xradia Ltd.

In the Media:

Two articles featuring CXS appeared in the *La Trobe University Bulletin* November/December 2006 issue. Both articles were part of the 'Research in Action' section of the Bulletin -

- *New Frontiers in Imaging*, page 8 - 9;
- *Physicists Collaborate for Invisible Worlds* - page 10.

Welcoming New Members:

Welcome to the following new members of CXS: -

- Luu Ba Mac, La Trobe University
- Mario Beltran, La Trobe University
- Olena Ponomarenko, University of Melbourne
- Corey Putkunz, La Trobe University

Conferences & Workshops:

Dr. Stephen Wilkins gave an invited talk "Portable Synchrotrons and Advanced Applications Symposium" in Ritsumeikan University, Japan, January 2007.

A/Prof Trevor Smith attended Photonic West, January 2007.

A/Prof Mike Ryan chaired the Young Investigator's session at Lorne Protein Structure & Function, February 2007.

Prof Leann Tilley chaired a session on Fluorescence Techniques at the FABLS Workshop, February 2007.

Prof Keith Nugent attended the Creative Victoria Roundtable Meeting, February 2007.

Dr. Eric Hanssen attended the 32nd Lorne Conference on Protein Structure & Function, February 2007.

Dr. Nick Klonis attended the BIO21, FABLS Annual Workshop, February 2007.

Prof Keith Nugent was a judge at the *BHP Billiton Science Fair* at Scienceworks, Melbourne, February 2007.

Prof Keith Nugent, Prof Leann Tilley and Dr Steve Wilkins attended the SCANZ 2007 Conference-Crystal XXV at Pokolbin, Hunter Valley, April 2007.

Scattering, Structure and Dynamics in Electronic Systems Workshop

The Theory and Modelling Program will be hosting the Theoretical Studies of Scattering, Structure and Dynamics in Electronic Systems Workshop in partnership with the ARC Centre for Antimatter-Matter Studies (CAMS). This workshop will be held on Monday 28th May, 2007 at the University of Melbourne.

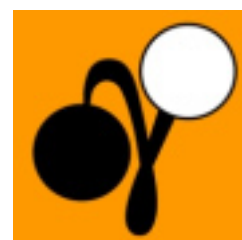
The groups aim is to explore areas of common interest in theoretical investigation of photoionisation, scattering, imaging and other fundamental electronic process.

Speakers from CAMS contributing to this joint workshop are:

- **Igor Bray:**
The Convergent Close Coupling Approach to Atomic Collisions

- **Dmitry Fursa:**
Fully Relativistic Approach to Electron-atom Collisions
- **Andris Stelbovics:**
Exterior Complex Scaling Approach to Electron-atom Scattering
- **Alisher Kadyrov:**
Formal Ionisation Theory for Coulomb Three-body Problems
- **Andrey Lugovskoy:**
Attosecond Laser Pulse Interactions with Rydberg Atoms
- **Anatoli Kheifets:**
Close-coupling Approach to Single and Double Photoionisation of Atoms.

For further information on this workshop please contact Dr. Harry Quiney, Theory and Modelling Program Group Leader on 8344 5114.



Workshop Partners

ARC Centre for Antimatter-Matter Studies

Introducing Dr. Chris Hall



Dr. Chris Hall
Monash Centre for
Synchrotron Science

Dr Chris Hall, a Senior Research Fellow, was born in London and grew up in several small towns in Essex and Hertfordshire in England.

Chris' first year of PhD was building a microprocessor controlled spectrometer for infra red radiation, and then the readout electronics and control system for a large, high energy gamma ray detector for astronomy, the latter of which was the subject of his PhD thesis.

Chris carried on this work after the PhD, as a post-doc in Cleveland Ohio, spending three years at the Case Western Reserve University.

As part of the Monash Synchrotron Science Centre and a member of the CXS, Chris believes that he is part of a great team progressing the provision of detectors for synchrotron science.

Chris hopes to pursue biomedical imaging research at the Australian Synchrotron using world's unique facility: The Imaging and Medical Therapy Beam Line.

Chris is married with two children and enjoys cycling and hiking. He also confesses to being a life long home brewer and hopes to carry on with the craft in Melbourne and bring the taste of real ale to his friends and colleagues.

And the Winner of the Banner Competition is...

As part of the CXS marketing strategy we asked for your help developing two expandable banners which would incorporate our title, logo and look in the design.

To do this we set up a competition seeking attention or imagination grabbing words/or ideas to place on our banners yellow area.

What we received were single word combinations, grand statements, graphics and photo suggestions, and banner concepts to help us promote what CXS is about.

We were impressed to see that the many

and varied entries came from Centre members, both locally and internationally, and members of the public.

After much deliberation the panel of judges awarded the first prize of \$100 to Joanne Kuluveovski from the University of Melbourne for her minimalist vision and design.

Congratulations Joanne on an excellent concept. The 850mm x 2200mm banners showing your work will soon be developed for the world to see!

The judges would like to thank all those who entered; your input is greatly appreciated.

We look forward to seeing many more people taking part in similar competitions in the future.



Joanne Kuluveovski
Winner of the
CXS Banner Competition

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The ARC Centre of Excellence for Coherent X-ray Science (CXS) is an Australian government Initiative which began in July 2005 to explore what can be achieved with coherent X-ray optics; including an understanding of exotic phenomena such as X-ray phase discontinuities.

CXS headquarters is located at the University of Melbourne in Victoria, Australia, with participating nodes at La Trobe University, Monash University, Swinburne University of Technology and the CSIRO. Its mission is to be the world leader in the development of non-crystallographic techniques for the determination of protein structures.

"In Coherence" is produced quarterly by CXS. Contributions are welcome and should be forwarded to Ms. Tania Smith, CXS Chief of Operations, University of Melbourne Vic 3010, faxed +61 3 9347 8912, Email: tsmith@ph.unimelb.edu.au or Ms. Rosslyn Ball, Administration, Email: r.ball@ph.unimelb.edu.au

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Special thanks to Rosslyn Ball, Harry Quiney, Chris Hall and Sven Teichmann for their contributions to the April 2007 edition.

THE MEDIA IN FOCUS II - Appearing on Radio or Television

Are you a natural in front of the camera?

You don't have to be Dr. Karl Kruszelnicki, or even Julius Sumner Miller (if you can remember back that far!) to be a natural performer on radio or television. All you need is to overcome your initial anxiety and you are on your way.

The demands of television and radio, and the experience of an unfamiliar studio may seem like all the excitement you can handle, but if you follow these helpful hints you may find it is an experience you can get used to.

Be Prepared

As always preparation is the key. Be absolutely sure about what you want to say and what the purpose of your appearance is.

Be Positive

Always try and be positive. Never be angry or dismissive towards an interviewer, however difficult this may be, because there is a danger that this will alienate viewers or listeners.

Practise Makes Perfect

Get as much experience as you can, particularly when your field of research crosses into biotechnology; as it will be highly likely that good researchers in this area will be approached for an interview. There is no better preparation than experience and practical training will be invaluable. However, make sure that with any training that you undertake you are in

the hands of people who currently work, or have recently worked, in the media.

Live or Recording?

A key question about a radio or television appearance is whether it is recorded or live. Each has its advantages and disadvantages. While some people are more nervous about a live interview, others appreciate the opportunity to say exactly what they wish to say, without any possibility that their words will be edited before going to air.

Sound Bytes

Remember that in news or current affairs programs, the interviewer may wish you to crystallise your viewpoint or comments in a 30 second sound byte. Be prepared for this if you can.

Show Me the Money!

The print media does not usually pay for interviews, whereas radio and television programs may offer a fee or respond positively if you asked for one, especially if they wish to take up a substantial amount of your time.

We, as a centre, are not in the business of making a profit from publicity so it is highly recommended that you weigh up the time and inconvenience against the publicity benefits. Also, please keep in mind that if a fee is requested the following must be adhered to:

- Approval to receive a fee must be sort from the Director, Deputy Director or COO prior to the interview
- If you decide to request a fee you need to do it with the broadcaster from the onset, not afterwards
- If you are speaking to a television "researcher", which is the most likely scenario, you need to understand that they are a more junior member of staff and generally do not have the authority to grant fee requests

In our next and final edition of *The Media In Focus* we will be looking at what to do if you are dissatisfied with the outcome of an interview or your dealings with a journalist; as well as recommended training that is available to CXS members.

If you would like further assistance with any aspect of dealing with the media please contact the CXS COO for assistance.

Further Reading

The Role of the Media in Science Communication edited by Kate Akrill, Ciba Foundation, London 1994

Hitting the Headlines - A Practical Guide to the Media by Stephen White, Peter Evans, Chris Mihill and Maryon Tysoe, 1993

Surviving the Media - How to Appear Successfully on TV, Radio or in the Press by Diana Mather, 1995