Lightspeed

Australian Synchrotron News

December 2007

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1. REGISTER NOW FOR 2007 USERS MEETING

Registrations are open for the 2007 joint ASRP-Australian Synchrotron Users Meeting and associated science symposium in Melbourne from 11 to 14 December.

A symposium held at the Australian Synchrotron on 11 December will mark the facility's official Science Opening. It will include beamline tours, giving delegates a rare opportunity to view the facility, which is not open to the public.

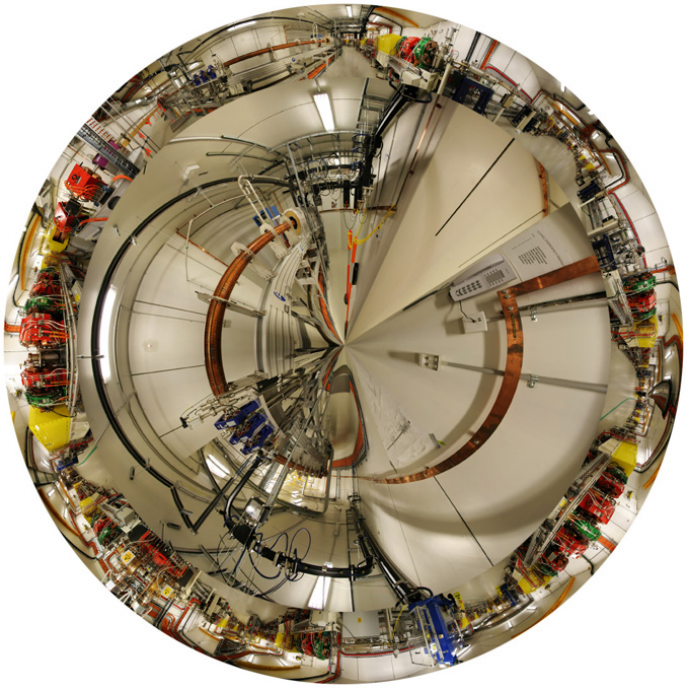
The Users Meeting will be held at Monash University in Clayton. It will feature:

- prominent international and Australian keynote speakers, including Prof. Soichi Wakatsuki from the Photon Factory, Prof. Michael Grunze from the University of Heidelberg, and Dr Kevin Prince from the Elettra synchrotron
- oral and poster presentations of recent synchrotron research
- updates on the Australian Synchrotron and the ASRP (Australian Synchrotron Research Program)
- breakouts focusing on each of the initial suite of nine beamlines at the Australian Synchrotron
- ASRP fellows and medal presentation
- networking sessions
- conference dinner (optional, cost applies).

For more information on the program, accommodation and travel support (for non-Victorians) go to: http://www.synchrotron.org.au/content.asp?Document_ID=5138.

2. AN ELECTRON'S EYE VIEW OF THE AUSTRALIAN SYNCHROTRON

Artist in residence Chris Henschke is looking at the Australian Synchrotron from a very different perspective.



Chris is exploring a concept that has historically intrigued artists and scientists alike — the concept of trans-disciplinary visualisation. He believes that "art and science are both borne from the primal drive to understand ourselves and the world we inhabit, and thus the two disciplines can be seen as complementary ways of exploring such territories". His work involves visualising data with the aid of digital technologies that "have now made many of the processes in current scientific research synonymous with those of contemporary media art".

The residency is a partnership between the Australian Synchrotron, Arts Victoria and the Australian Network for Art and Technology. To see more of Chris's work, visit his blog site at www.anat.org.au/blog/henschke/

3. SIGNED, SEALED, DELIVERED

On 1 November 2007, the Australian Synchrotron Company (ASCo) assumed responsibility for operation of the Australian Synchrotron.

The move is in line with the Victorian Government's commitment to the science community that the facility would be operated independently in the interests of national research and development. Operating funds are being transferred to ASCo.

Rod Hill, ASCo Acting Chair, signs the paperwork accepting transfer of operating responsibility.

L to R: Steve Gower, John Neve, Rod Hill, Max Roger & Mark Burger (DLA Phillips Fox) at the signing session.

Catherine Walter has taken up her position as ASCO Board Chair.

4. NSW MINISTER VISITS SYNCHROTRON

The Hon Verity Firth, NSW Minister for Science and Medical Research, visited the synchrotron with several of her staff on 3 December 2007.

The group toured the facility with Rob Lamb. Ms Firth is also NSW Minister for Women, Minister Assisting the Minister for Health (Cancer), Minister Assisting the Minister Assisting the Minister for Climate Change Environment and Water (Environment).

Rob Lamb with NSW Minister Verity Firth

5. NEW STAFF APPOINTMENTS

Since July 2007, Australian Synchrotron staff members have interviewed well over 100 high-quality applicants for new research, engineering, administrative and support roles.

Among the recent appointments are Dr Steve Gower (external relations manager), Dr David Cookson (science and beamline development manager) and Dr Cathy Harland (group leader – user support).

Steve Gower was formerly a senior adviser with DIIRD, (the Victorian Department of Innovation, Industry and Regional Development) where he was a member of the Australian Synchrotron project team. With a PhD in physics, Steve has worked for ANU (technology transfer for intellectual property), Wollongong University (Informatics Faculty Research Chair) and BHP Research (surface analysis research laboratories).

David Cookson was previously Scientific Manager for the ASRP and deputy project manager for ChemMatCARS at the Advanced Photon Source in Chicago. He has a PhD from Monash University and worked in Kodak's research laboratories for three years before moving into more academic research at the Photon Factory. David's current interests include synchrotron x-ray instrumentation with an

emphasis on materials science and molecular self-assembly on mesoscale systems.

Cathy Harland has been the ASRP beamline scientist at XOR at the Advanced Photon Source since 2003. She began her career at Wollongong University and then worked for BHP research before completing a PhD at the University of Sheffield, UK, on rare earth/iron/boron (REFeB) based hard magnetic alloys. She has also worked at Brookhaven National Laboratory.

6. BEAMLINE NEWS

Protein Crystallography Beamline

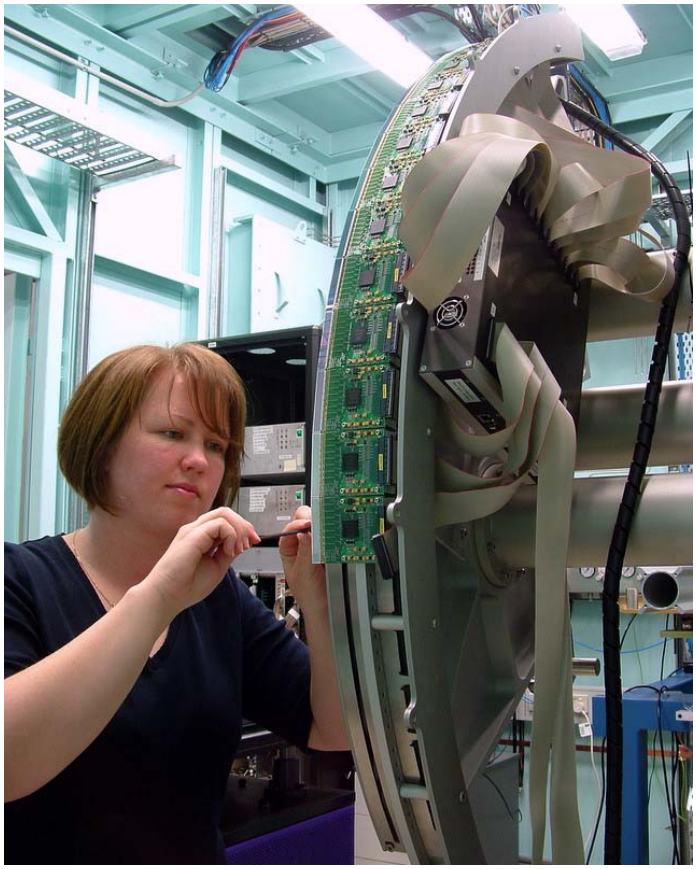
Over the summer shutdown, the beamline end station is being upgraded to a custom designed and built protein crystallography end station. This final development of the beamline will see the beamline performing at the highest levels internationally.

Julian Adams, PX Beamline Scientist

Powder Diffraction Beamline

The Mythen Si microstrip detector from the Paul Scherrer Institut in Switzerland has been installed and commissioned on the powder diffraction beamline. The detector covers 80 degrees in 2-theta and can collect data in under 1 second, providing an excellent facility for time-resolved in situ studies.

Kia Wallwork, Powder Diffraction Beamline Scientist



Beamline scientist Kia Wallwork installing the Microstrip detector modules.

Microspectroscopy Beamline

The 2-metre in-vacuum undulator was installed inside the storage ring tunnel in October and is ready for operation.

Two 3-metre in vacuum undulators weighing seven-and-a-half tons have been lifted over the storage ring tunnel for testing prior to installation.

The synchrotron's two 3-metre in-vacuum undulators (for the SAXS and PXII beamlines) have arrived. Once testing has been successfully completed, the undulators will be installed inside the storage ring in early 2008.

David Paterson, Microspectroscopy Beamline Scientist

Infrared Beamline

The IR beamline has appointed two new staff. Ljiljana Puskar was previously at Monash University. She has a background in mass spectrometry and infrared spectroscopy, having undertaken a PhD and subsequent postdoc position at the University of Sussex, UK. Dominique Appadoo will be responsible for the high resolution branch of the IR beamline. He was previously the beamline scientist for the far-IR beamline at the Canadian Light Source.

Mark Tobin, IR Beamline Scientist

Soft X-ray Beamline

The soft x-ray beamline has achieved theoretical photon resolution and characterisation of the beamline is progressing well.

Bruce Cowie, Soft X-ray Beamline Scientist

X-ray Absorption Spectroscopy Beamline

Commissioning of the XAS beamline is continuing, with several necessary repairs successfully completed. Final commissioning is expected to begin in early 2008.

Chris Glover, XAS Beamline Scientist

Imaging and Medical Therapy Beamline

The first three radiation enclosures in the Experiment Hall have been constructed. Installation of services will begin after the Christmas vacation and commissioning is expected to begin in July 2008 with low-energy micro-beam radiation therapy and fast white-beam imaging. Monochromatic capability will be added soon after. The construction contract for the civil part of the long beamline and satellite building is out for tender. Construction will begin mid-February with completion expected in mid-August. The first beam should be available before the end of 2008.

Artist's impression of the long beamline and satellite buiding.

Daniel Häusermann, IMT Beamline Scientist

7. SYNCHROTRON COMMUNITY NEWS

2007 ASRP/Australian Synchrotron Users Meeting—registration now open

The 2007 joint ASRP-Australian Synchrotron Users Meeting will be held over three days from **Wednesday 12 to Friday 14 December** at the Clayton campus of Monash University in Melbourne.

The meeting will be preceded by a symposium on **Tuesday 11 December 2007** to mark the official Science Opening of the Australian Synchrotron. This event will be held at the Australian Synchrotron in Clayton.

The Users Meeting is free, but you must register. A registration form has been posted on the website.
http://www.synchrotron.org.au/content.asp?Document_ID=5138

ASRP beamtime submissions

The second round of applications for beam time at the Australian Synchrotron and other synchrotrons available through the ASRP closed on 29th October. The next round of submissions is expected to be announced in February or March 2008. If you would like to discuss your ideas with the beamline scientists at the Australian Synchrotron, please allow plenty of time.

New CXS laser facility

The ARC Centre of Excellence for Coherent X-ray Science (CXS) has a new toy. Australia's first femtosecond high-power laser facility was opened at Swinburne University of Technology in November 2007 by the Victorian Minister for Innovation, Gavin Jennings. CXS and its partners will use coherent soft x-rays generated by the laser facility to produce images of biological cells. One of CXS's first projects with the new laser will probe the structure of malaria-infected red blood cells, in collaboration with La Trobe University.

CXS was established in Melbourne in early 2006. Its stated aim is to be the world leader in the development of coherent x-ray diffraction for imaging biological structures such as membrane proteins.

The high-power laser will complement CXS studies at the Australian Synchrotron. It will enable the development and testing of new techniques that can then be applied to actual samples using synchrotron soft x-ray beamlines.
http://www.coecxs.org/

Australia's first amber find

Paleontologist Sue Hand from the University of NSW plans to use the Australian Synchrotron to help unlock the secrets of Australia's first ever amber find. Found by a Queensland couple on a remote beach on Cape York Peninsula, the amber is thought to be 15 to 20 million years old. It varies in colour from pale lemon to orange, red and deep blue. Dr Hand and her colleagues will travel to Cape York next year to study and catalogue the deposit.

http://www.theaustralian.news.com.au/story/0,25197,22521014-27703,00.html

8. FORTHCOMING EVENTS

AUSTRALIAN EVENTS

6th AINSE/ANBUG Neutron Scattering Symposium (AANSS) 2007

4–6 December 2007
AINSE, Lucas Heights, Sydney, NSW

Australian Synchrotron Users Meeting 2007 and Science Symposium

11–14 December 2007
Australian Synchrotron (11 December) and Monash University (12-14 December), Melbourne, Victoria
http://www.synchrotron.vic.gov.au/content.asp?Document_ID=5139

32nd Annual Condensed Matter and Materials

30 January – 1 February **2008**
Wagga Wagga
Registration open at
http://www.science.uts.edu.au/physics/wagga08/wagga08.htm

AXAA-2008 National Conference

4 – 8 February **2008**
Melbourne
http://www.pco.com.au/axaa2008

Earlybird registration: By 5 November 2007
Registration brochure:
http://www.pco.com.au/axaa2008/AXAA%20preconf%20FINAL.pdf
Registration:
https://www.secureregistrations.com/AXAA08/
Student Bursaries:
http://www.pco.com.au/axaa2008/AXAA%202008%20Student%20Sponsorship%20Flyer.pdf

INTERNATIONAL EVENTS

For additional information and listings, see:
http://www.lightsources.org/cms/?pid=1000068

International Conference on Magnetic Materials (ICMM–2007)

11–16 December 2007
Saha Institute of Nuclear Physics, Kolkata ('Calcutta'), India
The International Conference on Magnetic Materials is intended to provide a forum for presentation and discussion in the recent developments in magnetic materials. The presentations will cover both materials (magnetic thin films, nanoparticles, spin glasses, amorphous nanocrystalline and granular materials, intermetallics, magnetic semiconductors, etc) and methods (magnetization, scattering techniques, including light, neutron and x-ray), resonance, high magnetic fields, and magneto-optic effects).
Registration deadline: 30 August
http://www.saha.ac.in/cmp/icmm.2007/
Email: icmm.2007@saha.ac.in

8th World Biomaterials Congress—2008

28 May–1 June **2008**, Amsterdam, The Netherlands
http://www.wbc2008.com/
Crossing Frontiers in Biomaterials and Regenerative Medicine
Student travel awards will be available.
Deadline for abstract submission is **30 September 2007.**
The Call for Abstracts and Registration is now online at:
http://www.wbc2008.com

6th International Conference on Synchrotron Radiation in Materials Science (SRMS-6)

20-23 July **2008**, Campinas, Brazil
http://www.srms-6.com.br
The conference's main topics are archaeological materials, catalysts and clusters, complex oxides, data-storage and engineering materials, films, surfaces and interfaces, geo-physical and electronic materials, glasses and ceramics, liquids, magnetism, materials under extreme conditions (high pressure, etc.), metals and alloys, metamaterials, molecular electronics, multiferroics, nanostructured materials and self-assembly, polymers and biomaterials, photo materials, nanofocus techniques, strongly correlated materials, superconducting materials, industrial use of SR, and instrumentation/recent developments.
Students and post-doctoral fellows may be able to apply for registration waivers.
Deadline for abstract submission is **7 March 2008.**

IUMRS-ICEM 2008:Synchrotron Radiation (Symposium J)

International Conference on Electronic Materials
28 July – 1 August **2008**
Hilton Sydney, Sydney, Australia
Precise and potentially non-destructive characterisation of bulk-, micro- and nanostructures is critical for the design and manufacture of contemporary electronic materials. Advances in various x-ray diffraction, absorption and microscopy techniques enable insight into the structure and dynamic behaviour of such materials. Furthermore, recent rapid development of the methods and techniques utilising synchrotron radiation has opened new possibilities for direct and diffractive imaging and in-situ studies of materials at the nanometre scale.

Collaborations between the physical and material sciences have created new methods of imaging of modern materials and nanostructures using conventional and synchrotron x-rays. We hope to bring together scientists of all disciplines who use x-rays to solve their scientific problems, allowing participants to gain a new understanding of, and appreciation for, the role that advanced synchrotron techniques can play in their research.

- Advances in x-ray microscopy techniques and instrumentation
- Novel methods for non-destructive characterisation of materials
- Three-dimensional imaging methods
- Characterisation of interfaces and microstructural defects
- Structure and deformation of nanostructured and thin-film materials
- Advances in theoretical and/or computational imaging

More: http://www.aumrs.com.au/ICEM-08/Symposia/?S=9

MORE INFORMATION

A list of Australian Synchrotron Project personnel can be found at http://www.synchrotron.org.au/content.asp?Document_ID=129.
Email: info@synchrotron.org.au

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HOW TO UNSUBSCRIBE

TO UNSUBSCRIBE

Send an email with UNSUBSCRIBE Synchrotron in the Subject line to info@synchrotron.org.au