

current events

This section carries events of interest to the synchrotron radiation community. Works intended for this section should be sent direct to the Current-Events Editor (s.hasnain@dl.ac.uk).

Foundation stone for PETRA III brings the brightest storage ring a step closer

On 14 September 2007 a small ceremony at PETRA III was held where the project director, Edgar Weckert, and DESY director, Albrecht Wagner, laid the foundation stone of the new 280 m-long experimental hall that will house up to 14 beamlines. Special measures have been taken to ensure a 'vibration-free' experimental hall so that full advantage of the source (1 nm rad) is harnessed for nanoscience challenges in materials and biological sciences.

The PETRA tunnel has been completely emptied and installation of service pipes has started with new bending magnets waiting to be installed. The new machine will accommodate insertion devices ranging from 2 m to 20 m and thus provide a variety of options for the range and scope of experiments.

The construction costs of the new X-ray source amount to USD 300M, 90% of which is financed by the Federal Ministry for Education and Research and 10% by the Free and Hanseatic City of Hamburg and the Helmholtz Association. In addition, for experi-



The foundation stone for PETRA III being laid by Professor Wagner (second from right), Dr Beatrix Vierkorn-Rudolph (Federal German Ministry for Education) and Dr Weckert.

mental facilities, USD 35M has been provided by the partner institutes like the European Molecular Biology Laboratory, the GKSS Research Centre in Geesthacht, the Max Planck Society and the Universities of Hamburg and Lübeck. PETRA III is scheduled to start in 2009.

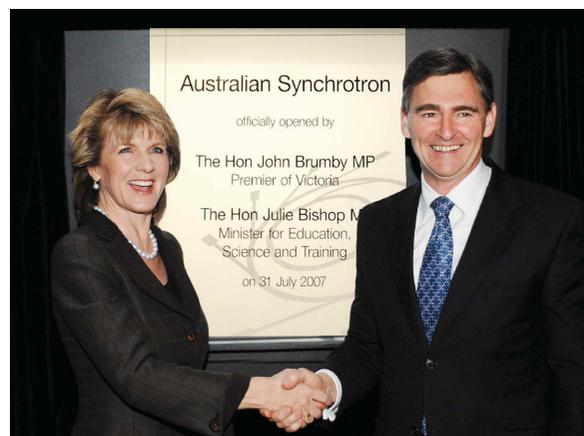
Australian Synchrotron officially opens

The Australian Synchrotron was officially opened by the Premier of the State of Victoria, John Brumby, and the Federal Minister for Education, Science and Training, Julie Bishop, on 31 July 2007. John Brumby, who is familiar to the synchrotron world through his direct engagement with the Australian Synchrotron, was sworn in as the 45th Premier of Victoria the day before on 30 July 2007. The opening of the Australian Synchrotron was his first official function as the Premier.

To mark the event, more than 300 invited guests witnessed a spectacular light show within the facility. A plaque was unveiled, and then guests were invited to tour the facility with Science Director Professor Robert Lamb.

The Australian Synchrotron has been built in a short time on a green-field site. The project's funding of AUD 157M (equivalent to USD 110M at the time) was announced on 30 January 2003 by the Victoria Government. In addressing the delegates, Mr Brumby expressed his delight at the opening of the project and said that it was a decision made by the Cabinet of two, himself and the Premier at the time, Steve Bracks; thus it was even more of a special occasion. The project has attracted additional funding of AUD 50M from the beamline funding partnership and AUD 14M from the Commonwealth Government's agency NCRIS, bringing the total project build budget to AUD 221M (equivalent to USD 155M). 'Australian scientists already punch above their weight, but this facility means we can expand into new areas, finding solutions to modern problems', Mr Brumby said.

The light source is a 3 GeV 216 m-circumference storage-ring facility with a natural emittance of 10 nm rad. The circumference was



Julie Bishop and John Brumby unveiling the plaque.

defined very early on when the building diameter, as well as the project end date, was fixed by the project director at the first IMAC meeting in June 2002. The project was formally delivered by the synchrotron delivery team in March this year, Alan Jackson, the technical director of the light source until recently, told the *Current Events* editor. One of the reasons why the facility was built so rapidly and at fairly low cost is that all of the money was provided at once in 2003 and the money was in the bank so careful planning could be made. The facility has also gained strength with increasing staff numbers, which currently stands at just over 60. In June 2007, currents of 200 mA were achieved in the storage ring.

Speaking on behalf of the national science community, the Director of the Walter and Eliza Hall Institute for Medical Research, Professor Suzanne Cory, welcomed the new facility saying it would contribute to reversing the 'brain drain' from Australia, turning it into 'brain gain' by attracting and retaining the best and brightest minds with new access to the state-of-the-art 3 GeV light source. 'I know that it will be a tremendous source of inspiration to young people', she said. 'People who previously felt they needed to work overseas to get access to a synchrotron will be able to rethink their career plan, and we will attract scientists from other countries to join us.'

Dr Richard Garrett, Director of the Australian Synchrotron Research Program, which has funded research at overseas facilities, commented 'I think the whole scientific community has been looking forward to the day when we have our own synchrotron.'

Five of the first nine beamlines are already installed, with a further four beamlines scheduled for 2008. The General Users Program has commenced.

According to one prominent future user, Professor Rob Lewis, the Director of the Monash University Centre for Synchrotron Science, the fact that Australian researchers now have an easily accessible third-generation light source is a very significant step forward. 'As academic physicists, this has been an amazing project to observe and to participate in', he said. 'From announcement to beam-on-sample has taken less than five years, and with enormous cooperation between Government, universities and research agencies. It opens up a particularly exciting era for scientists at Monash University as, not only is it close by, but the roll-out of the beamlines is in areas of special interest and utility to Monash researchers. We can now look forward to getting involved in a host of new research activities and technologies.'



Left to right: the State Governor and former prominent scientist Professor David De Kretser AC; the Federal Minister for Education, Science and Training, Julie Bishop; the Premier, John Brumby; the Director of the Walter and Eliza Hall Institute for Medical Research, Professor Suzanne Cory; Australian Synchrotron Science Director, Professor Robert Lamb.

We congratulate the Australian light source team and wish the wider Australian community well in the use of this unique resource.

Synchrotron radiation biologists meet in Manchester and Oxford

The 9th International Conference on Biology and Synchrotron Radiation, organized by Louise Johnson (DIAMOND) and Samar Hasnain (Daresbury), attracted 370 delegates from 31 countries. The conference was held at Manchester Bridgewater Hall on 12–16 August and then moved to the DIAMOND Light Source on 17 August. A satellite meeting on BIOXAS and metalloproteomics, organized by Isabella Ascone (SOLEIL), was held at SOLEIL on 10–11 August.

The meeting included 11 plenary lectures of duration 1 h and 58 invited half-hour talks arranged in dual parallel sessions. During lunch hours there were three workshops and several spontaneous group meetings. There were so many excellent talks it is difficult to select. Some of the highlights were Venki Ramakrishnan's exposition of the 70S ribosome structure with mRNA and tRNA bound giving the highest resolution yet for the intact complexes; David Stuart's thoughtful description of the contribution of synchrotron radiation to virus crystallography and proposals for a scheme of viral phylogeny based on structure conservation; Tom Blundell's insights into the role of academics in the drug discovery process; and Janos Hajdu describing his most recent time-resolved femtosecond delayed diffraction experiment using the 13.5 nm X-radiation from the FLASH (FEL) at DESY, and his application to live picoplankton cells to produce reconstructed images giving us a vision of science in the future. There were excellent working sessions on beamlines with a focus on automation and precision, on new detectors for protein crystallography and on new methods in imaging. The need for synchrotron radiation was emphasized in all talks on structures, highlighted by Harmut Michel's talk where his group need to screen several hundred crystals in order to solve the structure of the Na⁺/H⁺ antiporter NhaA and its conformational changes. The spectroscopy session was well enjoyed showing the scope of different techniques. The non-crystalline diffraction sessions included some beautiful talks on bacterial flagella and on the cornea in health and disease, and the plenary by Malcolm Irving on muscle showed how the fine structure of the 145 Å reflection arising from cross bridges had allowed new information on the length change/force relationship. On the final day approximately 130 delegates travelled by coach to visit the Diamond Light Source where they heard three talks on the machine and the beamlines, a presentation on SOLEIL by the new CEO Professor



Delegates of the Biology and Synchrotron Radiation 2007 meeting.

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Michel van der Rest, and a talk on the 4GLS and its potential for biology by Peter Weightman. The delegates were divided into small groups who toured the machine (during the scheduled shut down), the Macromolecular Crystallography and the Non-Crystalline Diffraction beamlines, and the Membrane Protein Laboratory.

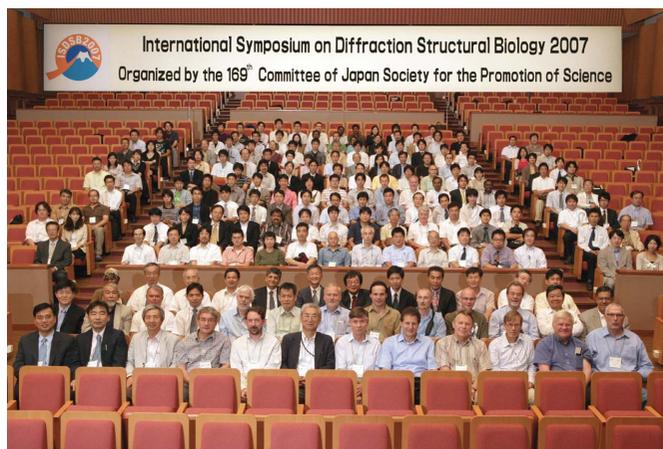
The delegates were able to relax and mix at a number of social occasions beginning with the reception hosted by the Lord Mayor in the magnificent surroundings of Manchester City Hall. The concluding gala dinner, hosted by the Vice Chancellors of Liverpool John Moores University, Manchester Metropolitan University and the University of Liverpool, was held at the Mere Golf Club near Tatton Park.

The Tenth Biology and Synchrotron Radiation Conference will be held in Melbourne, Australia, in 2010 and will be co-hosted by Monash University (Robert Lewis), the Australian Synchrotron (Robert Lamb) and CSIRO (Jose Varghese).

Diffraction biologists assemble in Tokyo

The Second International Symposium on Diffraction Structural Biology took place in Tokyo on 10–13 September. The symposium was organized by Noriyoshi Sakabe and Takashi Yamane. The symposium brought together experts from neutron, electron and X-ray diffraction on all aspects of structural biology ranging from studying enzyme mechanism to drug discovery. The symposium theme of bringing all of the diffraction techniques together worked

well and remains a unique mix. The meeting attracted over 350 delegates, who were kept delighted by many excellent talks, sometimes extending late into the evening with the hot session finishing at 9 pm. The delegates also enjoyed an excellent banquet where the President of the IUCr welcomed the delegates and also encouraged them to participate in the next IUCr Congress which is to be held next August in Osaka, Japan.



Delegates of the Second International Symposium on Diffraction Structural Biology.