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).

Canadian Light Source gets approval for routine operations

Canada's synchrotron has received a licence from the Canadian Nuclear Safety Commission to commence routine operation, clearing the last regulatory hurdle before welcoming researchers to the $173.5 million (US $130 million) University of Saskatchewan owned national facility. The Canadian Light Source (CLS) is currently completing its first set of seven beamlines. The first call for proposals for research at the CLS will go out this autumn, with the first experiments expected to be underway by early 2005. CLS is described as one of the largest science projects in Canada for a few decades, and is planning a whole set of activities to coincide with its grand opening celebrations in October to inform the wider public of its planned activities and its future impact on society. CLS is a 2.9 GeV third-generation synchrotron radiation facility with a circumference of 170 m and ten usable straight sections with an emittance of 18 nm rad [see *J. Synchrotron Rad.* (2004), **11**, 214].

SPring-8 starts its top-up operation

The top-up operation of the SPring-8 storage ring started successfully earlier in the summer this year. In the top-up operation, electron beam is injected at short intervals during user beam time, and the current stored in the storage ring is kept constant. Accelerator physicists at SPring-8 have termed their top-up operation an 'ideal top-up operation' and is a culmination of six years of R&D work. Presently, the beam is injected at an interval of 1 min or 5 min in order to keep the stored current at 99 mA. The injection current for refilling is 30–40 μA. The temporal variation of the stored current is about 0.1%.

Poland joins European synchrotron (ESRF)

Two weeks before becoming part of the European Union, Poland joined the ESRF as a Scientific Associate, at a level of 0.6% as regards financial contributions and scientific use. The category of Associate Member is a recent innovation. The original participation into ESRF was restricted to members contributing a minimum of 4% to the ESRF budget. Spain, Switzerland and Nordsync (a consortium of Nordic countries, namely Denmark, Finland, Norway and Sweden) contribute this minimum. The ESRF's agreement with Poland will last for two years (from July 2004 to June 2006). After that, it is likely that Poland may act as a catalyst in forming a Centralsync consortium with the Czech Republic and Hungary. In this way they could participate at a higher level so that they can become an observer on the Council, the body that makes decisions about important issues of ESRF policy. The Czech Republic and Hungary currently contribute 0.41% and 0.2%, respectively, to the ESRF budget.

The synchrotron community in Poland is already significant and its formal participation in the ESRF is bound to start a growth in the synchrotron radiation activities in Poland. They have already attempted to establish a national synchrotron radiation facility based on the 800 MeV Super-ACO. As we have seen, in countries such as Australia, Canada and Switzerland, participation in facilities abroad has led in due course to countries building their own sources; it is only a matter of time before Centralsync could form the seed for another facility.

Australian synchrotron makes rapid progress

The $206 million (US $150 million) Australian synchrotron project has reached a significant milestone with the recent announcement of all major contracts for the synchrotron machine. These include a $10.5 million contract with Toshiba International Corporation Ltd to supply the machine's radiofrequency (RF) system and $39.4 million for building and associated facilities (Thiess). The Australian synchrotron is based on the Boomerang storage ring which has a double-bend achromat structure, a circumference of 216 m with 12 useable straight sections and an emittance of 7 nm rad. The storage ring will be fed by a full energy booster synchrotron that in turn will be fed by a 100 MeV linac. This is to be supplied by Danfysik for $22.4 million as a turn-key injection system. The progress on building work has been rapid since the award of the building contract last year. The outer shell of the building is almost complete, as shown in the photograph below. The synchrotron is expected to open for users in 2007, as are Diamond in the UK and SOLEIL in France (2006) [see *J. Synchrotron Rad.* (2004). **11**, 366].

Outer shell of the Australian synchrotron building.

29th International Nathiagali Summer College focuses on light sources

The second week (5–10 July) of this year's Nathiagali Summer College was devoted to laser physics and advanced light sources. The first college was held in 1976 and was the brainchild of the late Professor Abdus Salam, who proposed the establishment of the college as an attempt to bridge the information gap between the north and south, the so-called north–south divide. These colleges have been organized annually by the Pakistan Atomic Energy Commission, the Higher-Education Commission and Quaid-I-Azam University, and are co-sponsored by the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy. Recently it has also attracted support from the Chinese Academy of Sciences and CERN, among others. Over the years the college has attracted over 5200 attendees from over 70 developing countries and some 500 renowned scientists including six Nobel laureates. This year it again attracted participants from more than ten countries. The college was divided into four parts and for each part the participants were largely different with less than 10% attending the whole two weeks. The small size of the college (40 at any one time) provided an excellent opportunity for the participants and lecturers to share their knowledge and experience.

Synchrotron radiation sources and their applications formed the subject of one of these parts (5–7 July). An additional interest among the participants was provided by exposure to the SESAME project, its status and opportunities. Pakistan is one of the founding members of SESAME. Herwig Schopper, President of the SESAME Council, formerly the Director General of CERN, gave the Abdus Salam lecture. He focused on the establishment of SESAME as an international project and stressed the need for a step change in science funding and infrastructure in the region. Economic development would only come from such bold action. Louise Johnson from Oxford, and Life Sciences director of Diamond, gave an overview on ‘Synchrotron Radiation in the Life Sciences’. She concluded her talk with a quote from the originator of the Nathiagali Summer College, Abdus Salam, ‘Science and technology are cyclical. They are a shared heritage of all mankind. East and west, north and south have all equally participated in their creation in the past, as we hope that they will in the future, the joint endeavor in sciences becoming one of the unifying forces among diverse peoples of this globe’. Zahid Hussain (ALS, Berkeley), Herman Winick (SSRL, Stanford) and Samar Hasnain (SRS, Daresbury) each gave several lectures and covered the sources, beamline design and science applications in physical, environmental and biological disciplines.

Samar Hasnain standing with Professor Aslam Baig, Science Chair of the Synchrotron Radiation and Laser Physics Summer College, with a couple of his research students. Professor Baig is the chairman of the Physics Department at Quaid-e-Azam University and has been appointed as the Scientific Director of SESAME.

The Queen honours John Pendry

John Pendry was honoured in the recent Queen’s birthday honours list with a knighthood for his services to science, so it is now Sir John Pendry who has turned 60. Sir John is well known to the synchrotron community through his theoretical formulism of EXAFS and XANES [Lee & Pendry (1975), *Phys. Rev. B*, **11**, 2795–2811] which, together with the work of Ashley & Doniach [*Phys. Rev B*, (1975), **11**, 1279–1288], has formed the basis of most of the rigorous analysis packages (*EXCURVE*, *GNXS*, *FEFF etc.*) used by thousands of EXAFS and XANES practitioners around the synchrotron world. At the time of the first international meeting on EXAFS, held at Daresbury on 28–29 March 1981, he was the head of the theory group at Daresbury laboratory and gave a talk entitled ‘The theoretical basis of EXAFS and edge structure’ [see *EXAFS for Inorganic Systems*, (1981), Daresbury Report DL/SCI/R17, pp. 5–12, edited by C. D. Garner and S. S. Hasnain]. He had formulated his theoretical formulism based on his previous work on the theoretical basis of a surface technique, LEED. His book, entitled *Low-Energy Electron Diffraction* (Academic Press, 1974), has remained an essential reading for surface scientists over the last three decades.

John Pendry.

Sir John began his career at the Cavendish Laboratory, Cambridge, followed by six years at the Daresbury Laboratory, where he headed the theoretical group from 1975 to 1981. He moved to the Blackett Laboratory, Imperial College, London, in late 1981. He was elected a Fellow of the Royal Society and a Fellow of the Institute of Physics in 1984. During his time at Imperial College he held all of the senior scientific appointments possible at the college: Dean of the Royal College of Science from 1993 to 1996; Head of the Department of Physics from 1998 to 2001 and the first Principal of the Faculty of Physical Sciences from 2001 to 2002.

In 2000, Sir John published a series of papers building on forgotten work by Russian physicist Victor Veselago from 1968, which laid the theoretical ground for the development of special left-handed or ‘metamaterials’ that could be used to form perfect lenses [see, for example, Pendry (2003), *Nature (London)*, **423**, 22–23]. Currently, Sir John is working on new optical materials developed jointly with colleagues at the Marconi company, which may lead to DVD discs with much higher information density, and to higher-resolution optical lithography for computer chips. Speaking in March this year he was open-minded about the eventual applications for metamaterials, ‘I believe that the really valuable applications have yet to be dreamt of. Think back to when the first lasers were made, the reaction was that they were just incredible, but what the hell would we do with them?’. Sir John, a theorist, has proved consistently insightful when asked to describe the relevance of physics to the world. Challenged in 1997 to give the college a glimpse of where he saw research in his discipline heading, he described physics as a practical enabling discipline ‘showing how to do things thought impossible, helping others refine their approach.’ ‘Physics is to the rest of science what machine tools are to engineering’, he wrote in a recent essay.