

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.s.hasnain@liverpool.ac.uk).

Victorian Government provides incentives to increase use of synchrotron facility by industries

The Victorian Government has recently announced a 'small technology industries uptake program' that will supply eligible businesses with vouchers that can be exchanged for access to facilities, services, advice or expertise from the Australian Synchrotron. This will enable Victorian businesses to develop internationally competitive new products, services and industrial processes.

The easier access to Australian Synchrotron capabilities in 'small technologies' such as microtechnology, nanotechnology, biotechnology and advanced engineering technologies will enable Victorian businesses to boost their competitiveness.

Diamond opens JEEP facility and look at Rolls-Royce engines

On 2 December 2010, leading scientists and policy makers gathered at Diamond Light Source for the official opening of a unique new research station that can create molecular-scale three-dimensional images of large objects such as aerospace and engineering components, and explore their structures in atomic-scale detail. Diamond's I12 Joint Engineering, Environmental and Processing Beamline Experimental Hutch 2 (known as JEEP EH2) produces one of the largest high-energy monochromatic X-ray beams of any synchrotron in the world, and also has an exceptionally large sample mounting stage, housed in a specially constructed end-station. While most synchrotron beamlines focus brilliant light or X-rays on microscopic samples such as protein crystals, JEEP can be used to examine massive samples over a metre long and up to 2000 kg (2 tonnes) in weight and position them with micrometre accuracy. Engineers from Rolls-Royce are the first researchers to use the new JEEP facility. They are testing innovative coatings for fan blades of the Trent 1000 engine (pictured below). The new engine powers the Boeing 787 Dreamliner, due to enter service in 2011.

Lord Broers, Chairman of Diamond Light Source and Past President of the Royal Academy of Engineering, said 'Diamond provides world-leading experimental facilities for UK science and industry. By enabling large-scale components to be studied in such incredible



A Trent 1000 fan blade in the JEEP beamline.

detail, JEEP marks a real advance in our technological capabilities.' Professor David Rugg, material specialist from Rolls-Royce, said 'The information we can now obtain from JEEP will help us develop new processes, improve material properties and reduce cost. This detailed *in situ* examination of advanced engineering materials will enhance the durability of aerospace components.'

Diamond Light Source opened in 2007 and now has 18 beamlines operational and four more are under construction. In October's spending review, UK's Chancellor George Osborne announced that Diamond would receive capital funding for its Phase III development, enabling the construction of ten additional beamlines by 2018.

Financial contributions of Italy and UK to the ESRF are temporarily reduced

ESRF Management and Council has agreed a temporary scheme to alleviate the present financial difficulties of Italy and UK in funding science programmes. At its meeting on 29–30 November, the ESRF Council unanimously adopted a three-year resolution which allows these two member countries to reduce their financial contribution. All 12 member countries and seven scientific associates have renewed their long-term commitment to the ESRF, and especially to the continuation of its inter-governmental convention. The approval of the resolution determines a 6% reduction in expenditure capacity over the 2011–2013 period. The expenditure shortfall will be dealt with by reducing the number of beamlines and/or operation time of the accelerator complex, along with a revision of the deliverables of the upgrade programme. The implementation schemes of these saving scenarios will be prepared for decision at the spring 2011 meeting of the ESRF Council. Over the next three years the ESRF will make efforts to attract new members, scientific associates and other possible ways of collaboration with third parties interested in injecting new resources in the ESRF. In parallel, the ESRF Council and Management will work to develop new schemes to finance the ESRF's needs, which will also take into account the scientific use by a member country in determining its financial contribution.

Under the resolution voted by the ESRF Council, all parties retain their contractual shares and voting rights. However, instead of contributing 15% to the approved ESRF budget, Italy will contribute 13% for up to three years. Likewise, the UK contribution is reduced from 14% to 10%. The other parties, along with the seven scientific associates, will maintain their contribution levels as planned. The use of the ESRF by scientists from a given country is linked to the shares held by that country with, however, considerable flexibility aiming at excellence of the scientific programme. For Italy and the UK, scientific use will, from 1 March 2011 to 28 February 2014, be limited to average values of 13.41% and 10.32% of beam time, respectively.

SESAME attracts funds and support

Significant development took place during the 17th Council Meeting of SESAME. SESAME signed a number of memoranda of understanding and co-operation agreements including with the international laboratory CERN based at Geneva, Switzerland. Rolf-Dieter



Khaled Toukon, Director General of SESAME (front, second from right), signs MOUs and a collaborative agreement with CERN (Rolf Heuer, front, far left), ELETTRA (Giorgio Paolucci, front, second from left) and CLS (Josef Hormes, front, far right) at the SESAME Council Meeting on 9 November 2010.

Heuer, Director General of CERN, was a special guest at the Council meeting where he emphasized strong continued support of CERN to SESAME for technical cooperation. Josef Hormes, Director of the Canadian Light Source (CLS), said ‘This agreement is significant, for both SESAME and the CLS. SESAME is a testament to the power of synchrotrons to not only increase our understanding of the world around us but also of each other. This agreement will benefit science in Canada and throughout the Middle East.’

The Council also learned of the voluntary contributions from a number of member countries in order to achieve the completion of projects in a reasonable time scale. The Council delegates from Egypt, Iran, Israel, Jordan, The Palestinian Authority and Turkey issued the following statement, ‘Israel and Jordan confirmed their commitments to make voluntary contributions of USD 5 million over five years. TAEK (the Turkish Atomic Energy Authority) has also decided to contribute the same amount. The Egyptian Ministry of Higher Education and Scientific Research has requested a matching allocation and is waiting for the response of the Ministry of Finance. An advisory committee established by the Ministry of Education of the Palestinian Authority has recommended that the Palestinian Authority should contribute USD 1.5 to 2 million. Iran is actively considering contributing USD 5 million over five years.’ SESAME

Council President Sir Chris Llewellyn-Smith described the countries’ agreement as a breakthrough, ‘When we ask for money from the European Union, we are asked about the commitment of the council member states. That is why this agreement is extremely important.’

India’s Minister of State for Science and Technology visits Photon Factory

Shri Prithviraj Chavan, India’s Minister of State for Science and Technology, visited the Indian beamline at KEK’s Photon Factory (PF), BL18B. Before commencing the tour, the minister’s party was briefed by Professor Milan Kumar Sanyal, project leader and Director of the Saha Institute of Nuclear Physics, and Atsuto Suzuki, Director General of KEK, on the facilities and on the experiments being conducted in each laboratory.

India’s Department of Science and Technology and KEK signed a Memorandum of Understanding (MOU) on Scientific and Technological Cooperation in October 2008. Based on this MOU, India has set up a dedicated beamline (BL18B) at the PF for use by Indian researchers. In June 2010, Indian researchers initiated a preliminary experiment using the PF’s X-ray diffractometer provided by KEK. Full-scale operation of the Indian beamline is expected to start in 2011. The beamline is to be used for structure analysis of nano-materials, solid and liquid surfaces or thin films. 50% of available user beam time will be made available to the general PF users community after the commissioning period.



Front row from left: Minister Prithviraj Chavan and Atsuto Suzuki. Back row from left: M. K. Mukhopadhyay, Masaharu Nomura, Osamu Shimomura, S. K. Sood, M. K. Sanyal, A. Kumar, Fumihiko Takasaki and T. Pankajakshan.