Journal of
Synchrotron Radiation
ISSN 0909-0495

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).

Ribosome structural efforts receive prizes

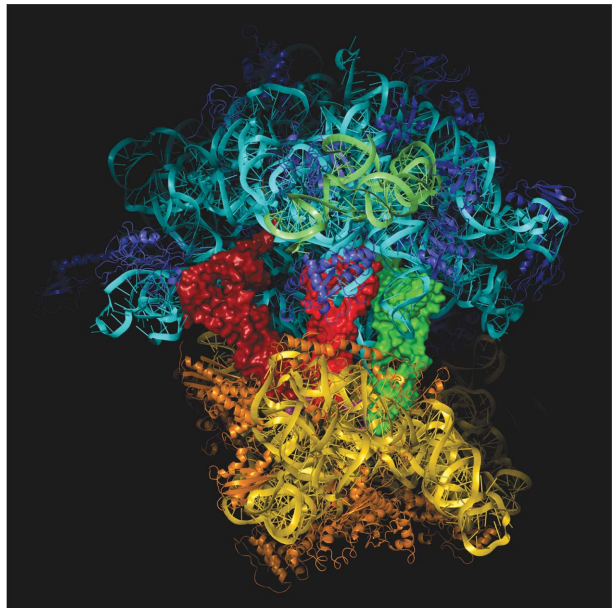
Two prizes have been bestowed on structural work on the ribosome.

In a ceremony to be held on 27 April 2007 in Geneva, the Medical Research Council's Laboratory of Molecular Biology scientist Venki Ramakrishnan will receive the prestigious 2007 Louis-Jeantet Prize for his work on the atomic structure of the ribosome for which he has used many synchrotron sources, including SRS and the ESRF.

Ada Yonath of the Weizmann Institute, a regular visitor to many synchrotrons, including EMBL Hamburg and APS in Chicago, was jointly awarded the 2006/2007 Wolf Prize for Chemistry with George Feher of the University of California, San Diego, USA. The work of Ada Yonath on ribosomal crystallography extends over more than two decades. The Wolf Prize has been awarded since 1978 and consists of a certificate and a monetary award of USD 100000. In the event of two or three recipients sharing the prize, the honorarium is divided equally. The prize presentation takes place at a special ceremony at the Knesset Building in Jerusalem, with the award being presented by the President of Israel.

The Louis-Jeantet Prize for Medicine each year honours scientists who are distinguished for the highest quality of biomedical research in Europe. The purpose of the prize is to encourage further projects of excellence in the prize-winners' laboratories. The 2007 prize winners are Venki Ramakrishnan, a researcher with the Medical Research Council's Laboratory of Molecular Biology in Cambridge (UK), and the British biochemist Stephen C. West, a researcher with Cancer Research UK's London Research Institute. Each of the prize winners receive the sum of USD $530000 to pursue their research and the sum of USD $100000 for personal use. Venki Ramakrishnan obtained three-dimensional images of the atomic structure of the ribosome, an essential component of the 'cellular machinery' and one of the main targets of antibiotics. This has allowed Ramakrishnan's team not only to gain detailed knowledge of how it contributes to protein production but also to directly see how antibiotics bind to specific pockets in the ribosome structure. On hearing about the prize, Ramakrishnan said 'With so much excellent research being done in many labs, I feel lucky to have received this recognition and also thank the wonderful colleagues I've had over the years who made our research possible. The award will help us attempt some riskier and more challenging projects.' He continued 'I moved to the UK from America in large part because of the Medical Research Council's policy of providing long-term stable support for basic science at its Laboratory of Molecular Biology, which is particularly helpful for this type of work.'

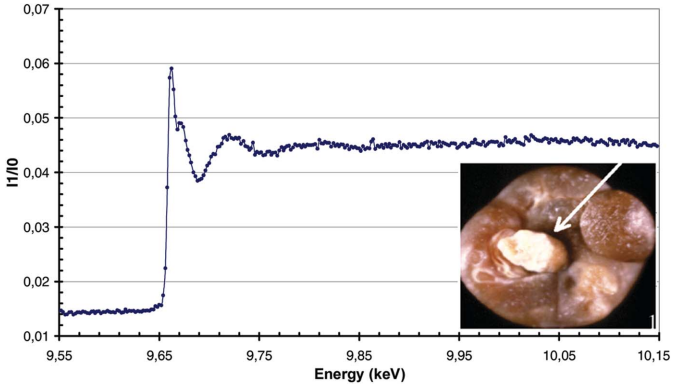
Venki Ramakrishnan.



Structure of the ribosome.

First experiments at SOLEIL

We reported in the last issue that the first set of users were beginning to take beam on DIAMOND [*J. Synchrotron Rad.* (2007), **14**, 230]. Now, on 21 March 2007, the very first X-ray absorption spectrum has been collected on a kidney stone at SOLEIL. These biomaterials are composed of nanometer-scale crystals of various inorganic mineral compounds, *e.g.* Ca oxalates, Ca and Mg phosphates, uric acids and



The very first X-ray absorption spectrum, collected on a kidney stone, from SOLEIL.

urates. All calculi contain some proportions of an organic matrix composed of biological macromolecules such as proteins and glycosaminoglycans. In addition, various metals, owing to their special affinity for some crystalline species, may play a role in crystal formation and/or organization of the stones. The purpose of the experiment is to precisely define the local environment of such heavy elements in order to understand the initial step of the formation of kidney stones. The experiment was performed at the DIFFABS beamline by a multi-disciplinary team [D. Bazin (CNRS), M. Daudon (Necker Hospital, AP-HP), X. Carpentier (Tenon Hospital, AP-HP)] and staff (Thiaudière, Somogyi and Reguer) from SOLEIL.

Molecular Observatory at Stanford

On Friday 23 March 2007, Stanford University, California Institute of Technology and the Gordon and Betty Moore Foundation came together to establish the new Molecular Observatory at Stanford Synchrotron Radiation Laboratory (SSRL). The launch ceremony was attended by Stanford President John Hennessy, Caltech President Jean-Lou Chameau, and Intel founder and philanthropist Gordon Moore.

Just as astronomers use specialized observatories to study distant galaxies, chemists and molecular biologists need advanced tools for studying nanoscale structures, in some ways as inaccessible as the far reaches of the cosmos. The new Molecular Observatory for Structural Molecular Biology at the US Department of Energy's SSRL will help unlock the secrets of macromolecular crystal assemblies on the atomic level with an unprecedented degree of precision. 'Instrumentation seems to be the place where we can make the biggest impact, where new capabilities make possible great leaps forward', said Moore, addressing the crowd. 'It enables scientists to do things otherwise unavailable to them.'

Using SSRL's synchrotron electron accelerator, the observatory capitalizes on in-vacuum undulators on the new SPEAR-3 to create powerful beams of X-rays. The new observatory also boasts an automated sample-handling system that can be controlled remotely, allowing researchers from Caltech and SSRL users from around the world to conduct research without having to travel. The software developed to operate the system remotely, called *Blu-Ice*, was developed by SSRL computer scientists and is the first such system of its kind. Once a batch of samples has arrived at the laboratory, scientists working remotely have full control of how the samples are scanned. Presently there are seven remote-access systems in use at SSRL.

The new Molecular Observatory promises to push the boundaries of atomic and molecular-scale imaging. 'The new beamline being dedicated today will enable Caltech scientists and SSRL's users to address problems at the cutting edge of structural biology research', said Keith Hodgson, Photon Science Director at the Stanford Linear Accelerator Center (SLAC). 'We are very grateful to the Gordon and Betty Moore Foundation for their visionary investment.'

SSRL and Caltech will divide the research time on the new observatory, now undergoing commissioning. Development and installation of the observatory was funded by a USD 12.5 million gift from the Gordon and Betty Moore Foundation through an agreement between the California Institute of Technology and Stanford University, SLAC and SSRL.