

### 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).*

#### SPring-8 makes contribution to particle physics

Recently a team at SPring-8 [*Phys. Rev. Lett.* (2003). **91**, 012002] produced photons with a maximum energy of 2.4 GeV by Compton backscattering of laser photons (351 nm Ar laser) and 8 GeV electrons in the SPring-8 storage ring. A carbon nucleus was irradiated with these photons. By analyzing the data carefully, the group has found that a  $K^-$  meson and a new particle are simultaneously generated when a neutron inside the nucleus absorbs a photon, and that the new particle subsequently decays into a neutron and  $K^+$  meson. The mass of the new particle,  $1.54 \text{ GeV}/c^2$ , which was calculated from the energy of the photon beam and the  $K^-$  meson, is very close to the five-quark  $\theta^+$  particle predicted by a Russian theorist, Dmitri Diakonov, and his colleagues in 1997. We note with interest that major expansion in synchrotron radiation activities resulted from the parasitic use of accelerators built for the high-energy physics community in the early 1960s. Now, some 40 years later, the largest dedicated synchrotron radiation facility is being used to make a contribution to the discovery of new particles.

#### Construction of the Australian synchrotron begins

The major Australian construction company Thiess has been selected to construct the building to house the Australian synchrotron. The Innovation Minister, John Brumby, said that the establishment of a national synchrotron facility in Melbourne was the most exciting and significant science infrastructure investment in Australia for decades. "The project will create up to 2500 direct and indirect jobs and contribute \$65 million a year to the Victorian economy", Mr Brumby said. The Minister for Major Projects, Peter Batchelor, said the that \$39.4 million building would be purpose built to accommodate the synchrotron machine and its associated laboratories and technical facilities. It will have a footprint of  $10600 \text{ m}^2$ , with a roof span of 116 m covering the 67 m-diameter synchrotron machine with capacity

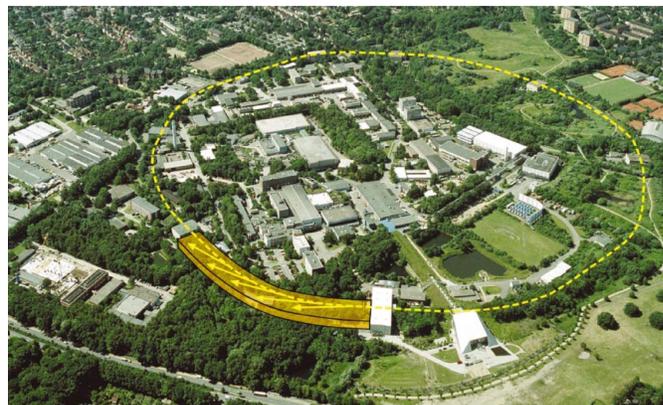


Artistic impression of the Australian synchrotron.

for 30+ beamlines. The outer rim of the building will house two storeys of offices, sample-preparation areas and control rooms.

#### DESY's accelerator PETRA to become a brilliant light source

DESY (in Hamburg, Germany) has begun plans to devote PETRA to synchrotron radiation science from 2007. At present, the PETRA storage ring is mainly used as a pre-accelerator for the super ring HERA, DESY's largest particle accelerator. Nearly 300 m of the 2.3 km-long storage ring have to be completely rebuilt to convert PETRA into a powerful light source, and a new experimental hall has to be constructed. Current plans envisage 13 insertion devices providing some of the brightest synchrotron light output in the X-ray region. This plan would complement DESY's X-ray free-electron project which is due to come into operation in 2011, assuming that other partners join in the building programme and in meeting the cost.



A view of PETRA.

#### SOLEIL hosts 2nd study weekend on genomics and BioXAS

On 29–30 June 2003 a highly stimulating study weekend on genomics and BioXAS took place. Participants from Europe, USA, China and Japan took part, sharing their experience of BioXAS and genomics. Topics ranged from the high-throughput expression of metallo-proteins to theoretical development and 'smart' computer analysis packages.