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).

ELETTRA Laboratory designated as 'Collaborating Centre' of the International Atomic Energy Agency

The International Atomic Energy Agency (IAEA), established by the United Nations in 1957 as the world's 'Atoms for Peace' organization, has introduced a new program for the creation of a network of 'Collaborating Centres' to support the IAEA in the implementation of its programs through research, development and training activities.

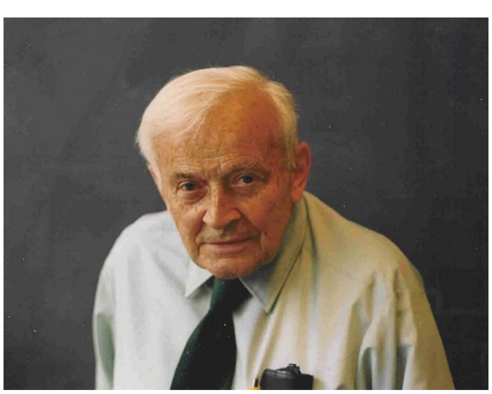
The Agency has included ELETTRA Laboratory in the short list of Collaborating Centres for a three-year period (2005–2008) thanks to the visibility achieved by the laboratory through the training and research activities of scientists from developing countries in cooperation with the Abdus Salam International Center for Theoretical Physics.

ELETTRA Laboratory, managed by Sincrotrone Trieste SCpA, will play a leading role in the agency's plans with reference to accelerator physics, synchrotron light and free-electron lasers, as mentioned in the work plan agreed upon by IAEA Deputy Director General, Werner Burkart, and the Senior Scientific Director of ELETTRA, Massimo Altarelli.

Paul Hartman, a synchrotron radiation pioneer

Paul Hartman, a synchrotron radiation pioneer, passed away in Ithaca on 20 May 2005 at the age of 91. Hartman was one of the first to investigate the use of X-rays generated as a by-product of a synchrotron. In 1956, he and colleague Diran Tomboulian reported the synchrotron spectrum in the soft X-ray region from an electron beam circulating in the 300 MeV Cornell synchrotron [*Phys. Rev.* (1956), **102**, 1423], confirming Schwinger's prediction [*Phys. Rev.* (1949), **75**, 1912]. The spectral distribution in the visible region had been reported in 1947 using the 70 MeV General Electric synchrotron [*Phys. Rev.* (1947), **71**, 829; *Phys. Rev.* (1948), **74**, 52].

Paul Hartman and Diran Tomboulin not only observed and characterized the synchrotron radiation spectrum in the soft X-ray region, but were also the first to observe the K- and $L_{2,3}$-absorption edges of beryllium and aluminium, thus performing the first synchrotron-based XAFS experiment [*Phys. Rev.* (1956), **102**, 1423]. It is worth recalling this effort in Paul Hartman's words from his presentation at the 2nd National Conference on Synchrotron Radiation Instrumentation held in Ithaca on 15–17 July 1981 ['Introductory Remarks' by P. L. Hartman (1982), *Nucl. Instrum. Methods*, **195**, 1–6]: "My own involvement with synchrotron radiation came, in an unlikely way, through some work on the optical properties of alkali halides. Light sources were a problem in the region 2000 to 1000 angstroms, where we were working. I went down one afternoon to see Leonard Jossem in his laboratory where he worked with Lyman Parratt on fine structure at X-ray absorption edges, not called EXAFS in those days. I wondered if it was nonsense to think of a high-current X-ray tube as generating enough bremsstrahlung to be useful at long wavelengths. He thought it would not be fruitful, but why didn't I consider using synchrotron radiation? That was my introduction. He cited the General Electric observations and Schwinger's predictions of radiation at wavelengths a lot shorter than 1000 angstroms. I straightaway went down the corridor to see Diran Tomboulian, who had for a long time worked with soft X-rays, to tell him what I had just learned and wouldn't it be a good idea to see if it were all really so, what with an operating 300 MeV synchrotron across the way in the Nuclear Studies laboratory. He had in particular one nice, compact, vacuum spectrograph that could be moved over to the synchrotron without too much difficulty."



Paul Hartman.

"A small problem came in connecting the spectrograph to the synchrotron without disturbing the vacuum of the latter. We had, of course, to load the photographic plate into the spectrograph in the darkened experimental hall, seal up the vacuum enclosure, evacuate it, and then open it to the machine. I well remember the late Saturday night when we opened the large separating valve to join the two instruments, and saw the vacuum rapidly deteriorating. A generous and quick application of pump oil around the large Wilson seal involved in the valve took care of it. Our first exposure was disturbing: one long dark streak across the plate. We surmised a light leak somehow. But Tomboulian had the wherewithal to check that – some previously utilized thin films of beryllium and aluminum. We put one of these behind the slit of his spectrograph and repeated the operation. It was an exciting moment when the lights went on in the dark room after plate development to see an absorption edge at the appropriate wavelength showing up in the streak in both the first and second order. The radiation was certainly there, and it was not weak, for the exposures were not inordinately long. We looked at the spectrum at two widely different peak energies, and after considerable subsequent laboratory work, were able to say something about the spectral distribution and the vertical distribution of the radiation at different wavelengths as determined by the cone angle. No doubt about it, Schwinger had it right."

Boris Batterman, the former director of CHESS said, 'Paul was a mentor for me for the last 40 years at Cornell. I learned optics, amateur astronomy and how important it was to be a fair and supportive colleague. When CHESS was being built, although in the middle of retirement, he designed the exit vacuum chambers that allowed us to get synchrotron radiation from the CESR storage ring. This was a very significant contribution to our project. Paul Hartman was an exemplary human being and a great scientist. He influenced my life enormously and made me a better person.' Don Bilderback, Associate Director of CHESS and one of the founding Co-editors of the *Journal of Synchrotron Radiation* said, “I knew and personally worked with Paul Hartman for a few years just before he went into retirement. He made helium-filled split ion chambers for vertical beam-position monitoring on the CHESS beamlines which had the name ‘Hartman monitors’ and were in use for many years. Paul was a great experimentalist and he drew beautiful figures by hand for publication. One of his outstanding figures is the CHESS logo, which Paul designed and sketched. It still is the ‘official’ CHESS logo that we use! Paul was a kind, gentle person, just a great human being. We will miss him.”

Paul Hartman was born on 13 July 1913 in Reno, Nevada, and earned a BS degree in electrical engineering at the University of Nevada in 1934 and obtained his PhD in Physics from Cornell in 1938. During World War II, he helped develop radar centimetre-wave generators for Bell Telephone Laboratories in New York City. He returned to Ithaca in 1946 to join the Cornell faculty as a charter member of the Department of Engineering Physics (now the School of Applied and Engineering Physics) with a joint appointment in the Physics Department, where he remained an Emiratus Professor.

Royal visit to the Canadian Light Source

The Canadian Light Source (CLS) welcomed the Queen and the Duke of Edinburgh to the national synchrotron facility on 19 May 2005.

‘This is an absolutely tremendous day for the university, the city and the province’, said University of Saskatchewan President, Peter MacKinnon. ‘We have been honoured with this opportunity to demonstrate to Her Majesty the kinds of cutting-edge research in the medical and life sciences in which the University of Saskatchewan is prominently involved.’ Bill Tomlinson, the Executive Director of CLS said, ‘The Royal Visit has been a once-in-a-lifetime event, it was an amazing opportunity to showcase the science being done on this campus and celebrate the potential the research has to better the quality of life of people everywhere’.

The Queen and the Duke of Edinburgh at the CLS.

The Queen was presented the key to the city of Saskatoon by His Worship Mayor Don Atchison. The Duke of Edinburgh toured the experimental hall of the CLS and found himself on familiar ground having been on a similar tour to the UK’s Synchrotron Radiation Source in Daresbury in July 1998.

SCSS gets one step closer to funding

SPring-8 Compact SASE Source (SCSS), the Japanese XFEL source, got one step closer to funding with a recent announcement by the Japanese government’s plans to set ten-year national goals in ten critical technology fields. This ten-year plan covers the fiscal period 2006–2010, during which SCSS is expected to be built. The plan is aimed at strengthening Japan’s international competitiveness and for revitalizing its scientific and technological capabilities. The SCSS, the next-generation X-ray source, is included in these ten fields, as one of the most promising technologies with application in a wide range of science disciplines just like the super-synchrotron SPring-8. SCSS is a relatively compact XFEL compared with TESLA XFEL and is expected to cost USD 480 million.