

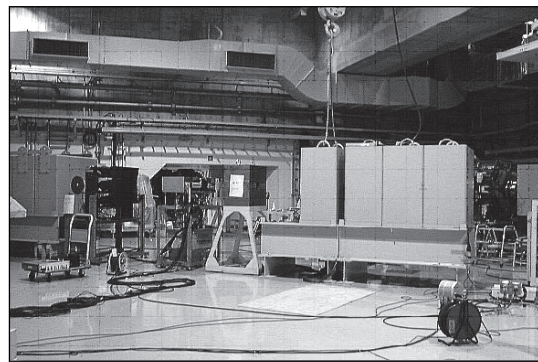
# News briefs

## Shielding of accelerators, targets and irradiation facilities (SATIF)

Particle accelerators are machines and instruments of growing importance in scientific research and industry. Today, there are about 20 000 accelerators operating around the world dedicated to various industrial applications – ion implantation and surface modifications, nuclear and particle physics research as well as non-nuclear research, radiotherapy and hadron-therapy, medical isotope production – and as synchrotron radiation sources. Both scientific and technical workers, equipment and materials need to be protected from intense radiation fields. In order to do so, the radiation fields around electron, proton and ion accelerators, as well as spallation sources, need to be characterised through modelling, using today's state-of-the-art methods. The following types of facilities are considered in this context: synchrotron radiation and very high energy radiation facilities, and free electron lasers.

Recognising the importance of the scientific and technical work in this area the NEA Nuclear Science Committee set up the SATIF expert group to examine the multiple aspects of modelling and designing accelerator shield systems. The objective of the SATIF expert group is to promote the exchange of information among scientists in this field, to identify areas in which international co-operation could be fruitful, and to carry out a programme of work in order to achieve progress in specific priority areas. This is primarily being achieved through a series of international workshops. In order to establish effective co-operation, they are held in the most advanced research centres with major accelerator facilities. Examples are CERN in Geneva, SLAC at Stanford, CYRIC at Sendai, and PAL at Postech.

Examples of the deliverables provided by the SATIF expert group are: the assessment of needs in experimental data for the validation of models and codes; the organisation of shielding experiments; the collection and compilation of experimental data sets; the assessment of models, computer codes,



Radiation shielding experiments at HIMAC, Japan.

parametrisations and techniques available for accelerator shielding design purposes; the organisation of international benchmark and comparison exercises; and the publication of results. The proceedings of the workshops contain a wealth of information of considerable importance for accelerator shielding practitioners. Seven volumes have been published so far and an eighth is scheduled for the end of 2006. The latest volume concerns the SATIF-7 workshop proceedings: *Shielding Aspects of Accelerators, Targets and Irradiation Facilities*, Sacavém, Lisbon, Portugal, 17-18 May 2004, ISBN 92-64-01042-4. Radiation shielding activities for a variety of applications were a major driving force in the last decade for developing the advanced Monte Carlo computer codes in use today.

The work carried out by SATIF is also relevant for other NEA expert groups and committees, in particular those concerned with radiation protection and public health, radiation dosimetry, radioactive waste management and decommissioning, and for the production of basic particle interaction data for a wide range of scientific and industrial applications. ■