

Radioisotope Production and Radiation Technology

Objective

To strengthen national capabilities to produce radioisotope products and radiopharmaceuticals and to apply radiation technology, thus contributing to improved health care and sustainable industrial development in Member States.

Radioisotopes and Radiopharmaceuticals

The Agency continued to assist Member States in producing radioisotopes and radiopharmaceuticals through capacity building and the dissemination and transfer of knowledge. In 2017, it expanded the focus of these activities to include regulatory aspects of radioisotope production and use. In October, it held a Technical Meeting of regulators and researchers responsible for the safe preparation and use of radiopharmaceuticals from 15 Member States, the World Health Organization and several professional societies. The meeting provided a platform for evaluating the status of regulations in different countries and for exploring the possibility of harmonizing regulations, with Agency support.

The Agency continued its support to Member States for the production of technetium-99m (Tc-99m), the most widely used radioisotope in nuclear medicine. In September, it launched a new coordinated research project entitled 'New Ways of Producing Tc-99m and Tc-99m Generators', involving ten Member States and six observers. The project aims at producing low to medium specific activity molybdenum-99 (Mo-99) using the photo-neutron route (i.e. the (γ, n) reaction on Mo-100) and developing corresponding guidelines, and at developing Tc-99m generators using low to medium specific activity Mo-99 produced by several routes. At the first meeting, held in December at the Agency's Headquarters in Vienna, the participants developed a work plan for the three year project.

Industrial Applications of Radiation Technology

In April, the Agency held the first International Conference on Applications of Radiation Science and Technology (ICARST-2017) in Vienna, with more than 500 participants from 73 Member States (Fig. 1). The conference highlighted the latest developments in the application of radiation science and technology, and focused on new initiatives to employ radiation technologies to meet emerging challenges and on building capacity in Member States for industrial development. Representatives of 45 equipment manufacturers, national research laboratories, dosimetry system suppliers, and non-governmental and academic research organizations participated as exhibitors.



FIG. 1. Director General Amano speaks during the first International Conference on Applications of Radiation Science and Technology, held in April.

The qualification of professionals in radiotracer and sealed source applications has historically been largely informal, based on on-the-job training by experienced local professionals and Agency experts. Increasingly, however, training and certification are becoming mandatory for those using radiotracers. In response to demand for more formal training, the Agency held a training course on industrial applications of radiotracers and sealed sources at the IAEA Collaborating Centre at the National Institute for Nuclear Science and Technology in Saclay, France, with participants from Cameroon, Côte d'Ivoire, the Democratic Republic of the Congo, Gabon, Madagascar and Morocco. The Agency held a similar training course on industrial applications of radiotracers at the National Centre for Nuclear Energy, Sciences and Technology in Morocco, with participants from Egypt, Kenya, the Sudan and Zimbabwe. Both courses included an examination under the certification scheme of the International Society for Tracer and Radiation Applications.