



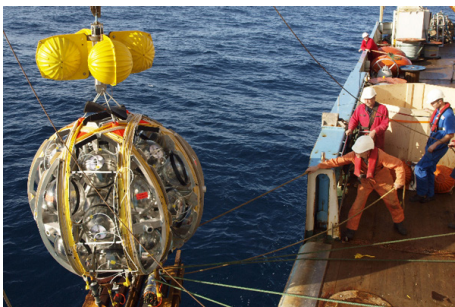
HEALTH

ELECTRONS TO RADIOGUIDE CANCER SURGERY

This innovative radioguided cancer surgery technique uses beta radiation, i.e. electron emission, instead of gamma radiation, the photons now commonly used in radiotherapy. The study is presented in an article

published in the January issue of The Journal of Nuclear Medicine.

This type of surgery aims to identify tumour residues in order to allow complete resection in the operating theatre. By injecting a radioactive substance (radiopharmaceutical) that emits electrons, it is possible to identify very precisely the cancer cells, which the drug binds with preferentially and activates metabolism. During surgery, the technique makes it possible not only a precise removal of the tumour but also to verify suspicions concerning other tissues and to control any remaining tumour residues. The lesser penetrating power of electrons compared to photons brings the advantage of avoiding contamination of high-uptake healthy organs, in addition to significantly limiting the radioactivity absorbed by medical staff. Researchers are now waiting for final approval so that they can commence preclinical tests on samples harvested during meningioma surgery. The technique, for which a patent has been filed by PCT, is the result of a partnership between INFN, University of La Sapienza, Fermi Centre, Italian Institute of Technology (IIT), Neurological Institute Carlo Besta and European Institute of Oncology (IEO). ■



ENVIRONMENT

AN ALLIANCE TO PROTECT THE ENVIRONMENT AND MARINE ANIMALS

An important partnership was signed between INFN, University of Catania and the Maritime Authority of Catania (Sicily): the aim is to favour interdisciplinary activities of common interest in the research

and monitoring, control and protection of marine and coastal ecosystems, focusing in particular on the south-western Ionian Sea. The three Institutions, within their respective areas of expertise, are committed to implementing a programme to make it possible to make mutually usable mercantile traffic data available so that they can be recorded in underwater observatories for studies on neutrinos installed in opposite the port of Catania and off Portopalo di Capo Passero.

The ultimate aim is to favour the development of integrated multidisciplinary skill sets to favour the entire research system and other sectors of public interest, such as marine fauna and environment monitoring for the prevention and repression of pollution phenomena. The initiative is supported by two large European research infrastructures, EMSO (*European Multidisciplinary Seafloor*) and KM3NeT (*Cubic Kilometre Neutrino Telescope*), which provide the use of the hard - and software facilities of abyss observatories installed in cabled underwater infrastructures off the coast of Sicily (Catania and Capo Passero). ■