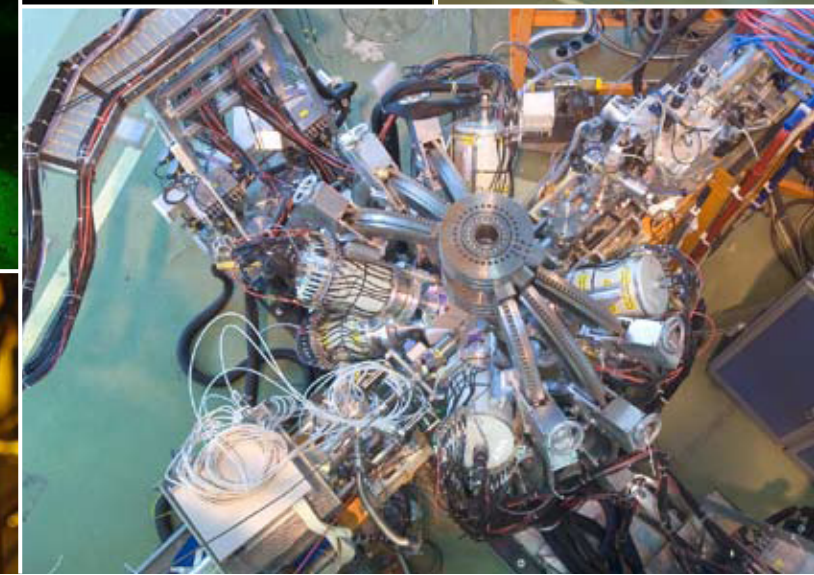
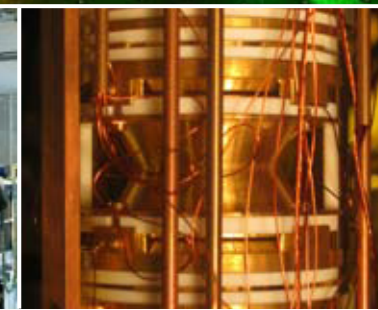
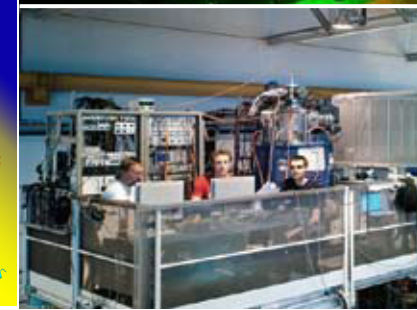
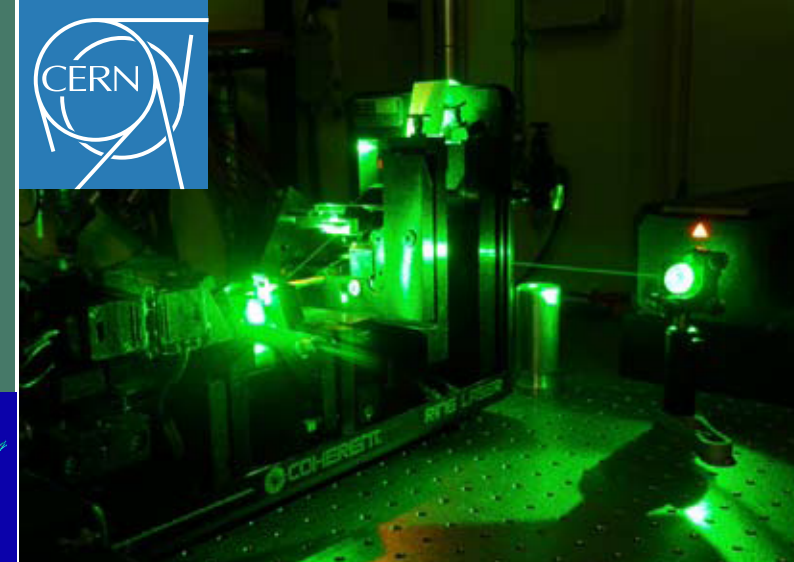
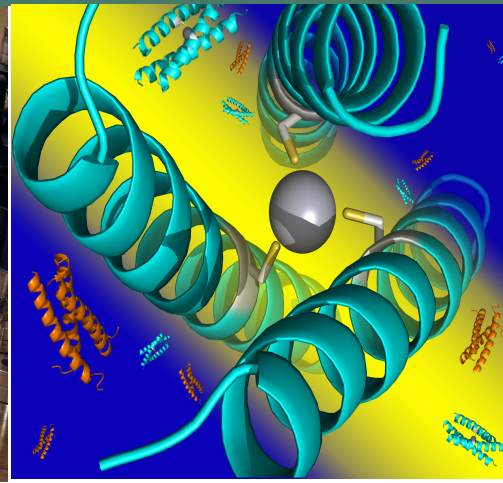
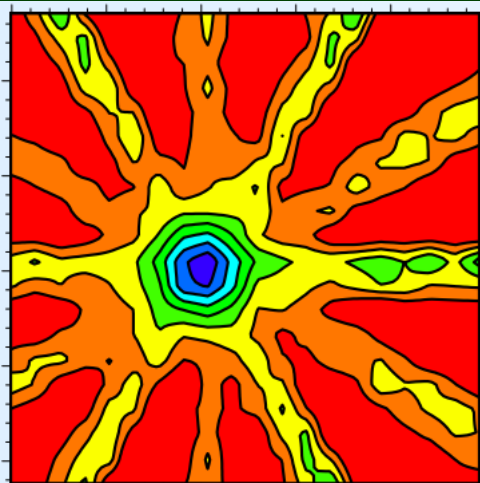
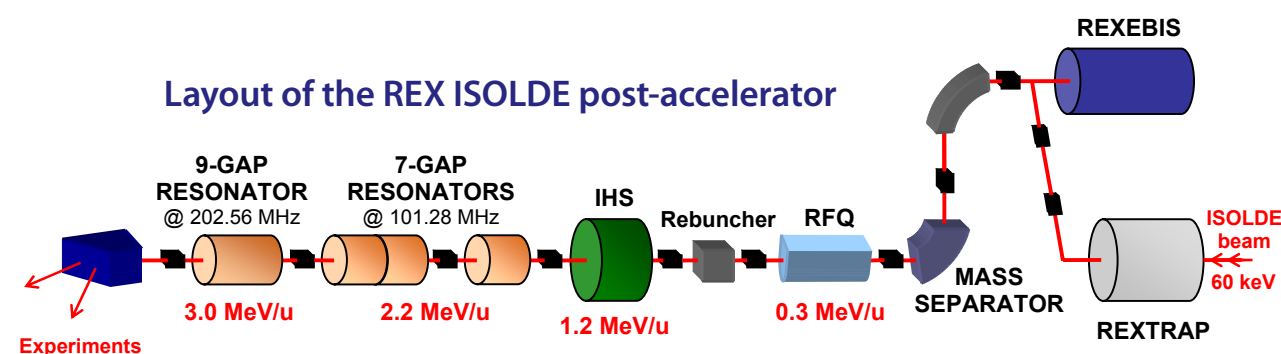


Condensed matter physics at ISOLDE
aims at the study of structural, electrical, optical, magnetic and transport properties in a variety of technologically and fundamentally relevant materials, including semiconductors, metals, high-temperature superconductors and ceramic oxides.

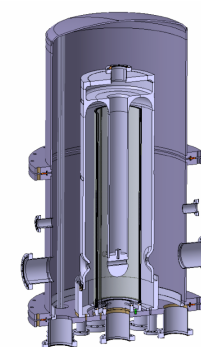
Biophysics and life sciences at ISOLDE
aim at the study of the structure, bonding and transport mechanisms in a variety of biological molecules such as proteins and amino-acids.



Layout of the REX ISOLDE post-accelerator



To remain at the forefront, the **HIE-ISOLDE** is the next generation post accelerator project aiming at increasing the performance of ISOLDE towards higher energy, higher intensity and improved beam quality.



HIE-ISOLDE Cavity

The ISOLDE Collaboration comprises 11 countries and CERN

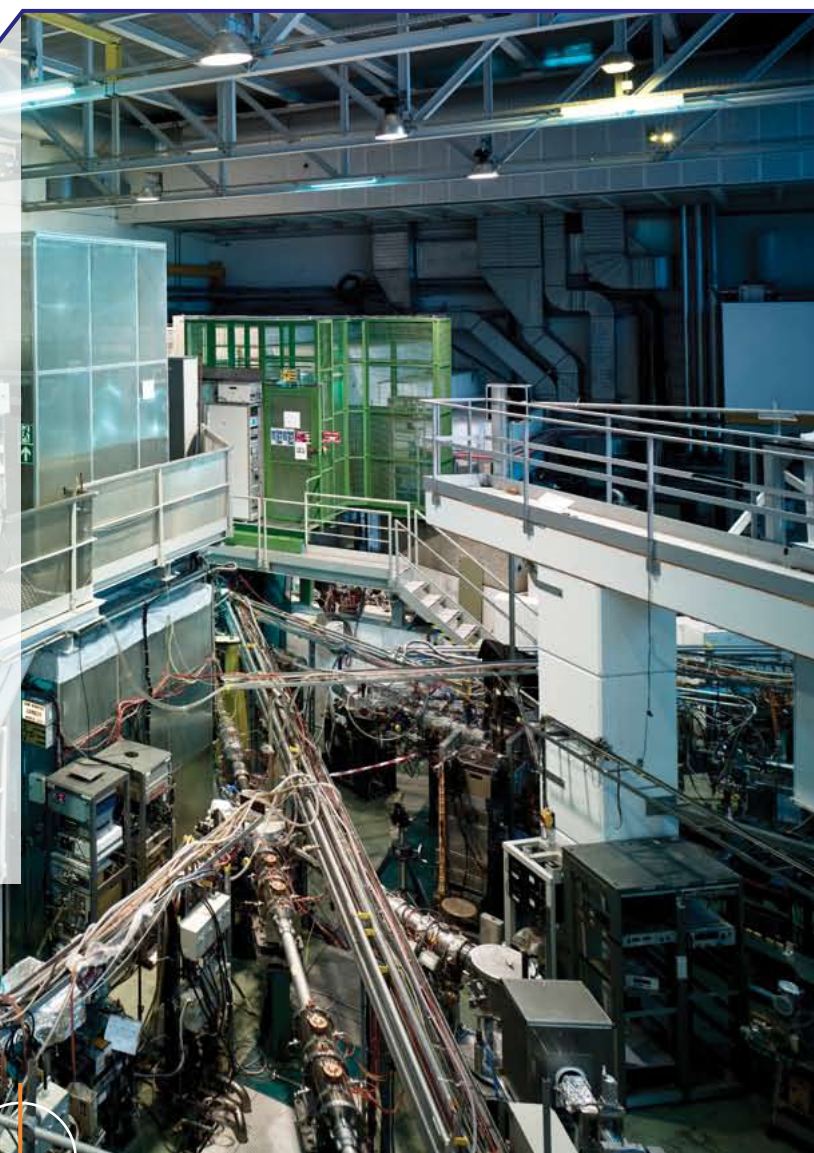


ISOLDE

Exploring exotic nuclei

All atoms contain a nucleus, which consists of specific numbers of protons and neutrons. The number of protons characterizes the element, while the number of neutrons determines stability against radioactive decay. The "exotic" nuclei produced at ISOLDE are so called because they are very different from stable atomic nuclei in the number of neutrons they contain. This makes them unstable and very short lived. While they do not exist on Earth, such nuclei play a major role in the life and death of stars.

The ISOLDE facility uses protons from CERN's accelerator complex to produce exotic nuclei of most of the elements. These radioactive nuclei are used for basic research in many areas of science: nuclear physics, nuclear astrophysics, atomic physics, condensed matter physics, radiobiology, and elementary particle physics. ISOLDE belongs to a network of radioactive beam facilities in Europe that advance our knowledge of these exotic nuclei.



CERN
European Organization for Nuclear Research
CH-1211 Geneva 23

Communication Group, June 2009
CERN-Brochure-2009-007-Eng

CERN, the European Organization for Nuclear Research, was founded in 1954. It has become a prime example of international collaboration, with currently 20 Member States. It sits astride the Franco-Swiss border near Geneva and is the biggest particle physics laboratory in the world.



Photos: CERN Photo Service

www.cern.ch