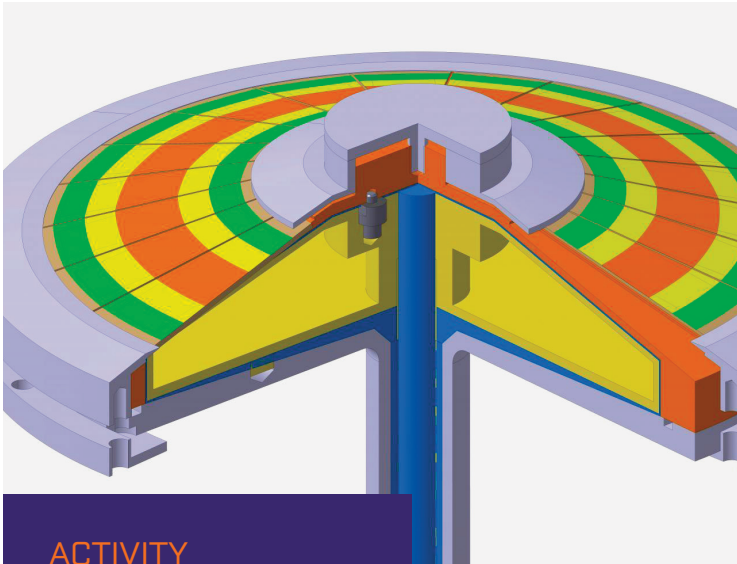


RADIOISOTOPES

DEVELOPMENT OF NEW ACCELERATOR BASED PRODUCTION METHODS



ACTIVITY DESCRIPTION

- Thermal calculations for the development of high power targets
- Design studies of high power targets
- Calculations for alpha-emitter isotope production (various ions, various targets)
- Production measurements and characterization using gamma-ray spectroscopy techniques
- Dosimetry using alpha particles

Design of a 10 kW irradiation station. The system carrying the targets is rotating (approx. 500 rpm). A water cooling system (in blue) is planned.

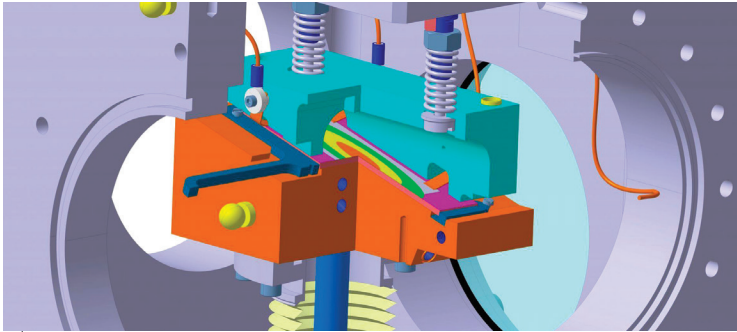
PERMANENT STAFF

5 researchers/engineers
1 technician

EQUIPMENT

SPIRAL2 FACILITY

- Ion beams from protons to mass 50-60, accelerated up to 14.5 MeV/A
- Various target materials
- High power targets
- Gamma-ray spectroscopy detectors
- Alpha particle detectors



1 kW irradiation station for R&D on methods of production of innovative radioisotopes. Constructed and tested by the Nuclear Physics Institute of the Academy of Sciences of the Czech Republic, this station will be operated in the Neutrons For Science converter room. The green, yellow and red ellipses represent the impact of the beam on the inclined target.

VARIOUS VALORISATION POTENTIALITIES

- R&D collaboration for production method development of targeted alphanradiotherapy isotopes using nuclear physics techniques: calculation, measurement by gamma-ray spectroscopy, production method development
- R&D collaboration for development of high power (and high power density) targets
- R&D collaboration for definition and design of a dedicated accelerator for the production of alphanradiotherapy isotopes
- Participation in the proof of concept for innovative radioisotopes
- R&D and proof of concept of dosimetry for the evaluation of innovative alpha emitters