

## Laboratory Nazionali di Legnaro

**Project reference:** FMGE980110

**Funded under:** [FP4-TMR](#)

## Laboratory Nazionali di Legnaro

**From** 1998-04-01 **to** 2001-04-30

### Project details

<b>Total cost:</b> Not available	<b>Topic(s):</b> <a href="#">0201 - Access for researchers</a>
<b>EU contribution:</b> Not available	<b>Funding scheme:</b> LFC - Access to Research Infrastructures
<b>Coordinated in:</b> Italy	

### Objective

Principal characteristics of the facility and of the support offered to users:

The INL of INFN are a reference point for Nuclear Structure research in Europe due to the presence of a reliable accelerator system, XTU-Tandem+ALPI superconducting linac delivering more than 5000 hours/year of heavy ion beams, and the two biggest gamma-ray spectrometers in Europe. The EUROBALLIII spectrometer, result of an EC Network involving 6 countries (IT, DE, FR, GB, DK, SE), with 239 GeHp detectors is the most efficient apparatus in the world for studies on the Nuclear Structure of high, super and hyper deformed nuclei. The complex GASP, 40 GeHp gamma array, coupled with RMS, high resolution recoil mass spectrometer, is a unique instrument for the study of nuclei far from stability.

Two Van de Graaf accelerators (2 and 7.0 MV), each delivering about 2500 hours/year of light ion beams, are devoted to Applied Nuclear research (radiation damage, radio biology, microdosimetry), Solid State, Medical and Environmental Physics. Available facilities include setups for: calibrated neutron beam, cells and material irradiation, hydrogen profiling, micro-beam, high resolution RBS. A molecular biology laboratory supports radiobiology activities. A Positron-Electron Tomograph PET is also available for cancer diagnostics.

The Material Laboratory is equipped for deposition of thin films, ion implantation, electron microscopy, mechanical and electrical characterization. Research is mainly focused on the development of advanced nuclear detectors. Fundamental Interactions research is also developed in the LNL. The ultra-cryogenic gravitational wave detector AURIGA is operative and part of the international network of similar detectors. The LNL Accelerator Technology division, after the completion of ALPI, is now dedicated to the construction of PIAVE first ECR-superconducting RFQ injector in the world. Projects are undergoing for High Intensity Accelerators and Radioactive Beams. Beside research facilities, LNL give access to: target laboratory, cryogenics and superconductivity laboratory, Users service, mechanical and electronic workshops, computer and data acquisition department, library, guest house and canteen.

Quantity of access being offered and number of users who may benefit: Access is offered to any facilities presented above, with preference to users coming from the less-favored regions. The new users can be integrated in the already existing groups as well as they may apply for new experiments. For what concerns the XTU Tandem-ALPI facility the new proposals will be submitted to the International Program Advisory Committee. For the other facilities (AN2000 and CN VdG) the experiment proposals are selected by a Local Committee.

We estimate that 100 researchers/year (200 researchers in 24 months) will benefit from this support, for a total of 5,000 man-days/year (10,000 man-days in 24 months). This corresponds to a total estimation of 95 projects/year (190 projects in 24 months).

## Coordinator

---

ISTITUTO NAZIONALE DI FISICA NUCLEARE  
Via Romea 4  
35020 LEGNARO  
Italy

Italy

Administrative contact: Graziano FORTUNA

## Subjects

---

[Education and Training](#) - [Scientific Research](#) - [Social Aspects](#)

**Last updated on** 2001-12-07

**Retrieved on** 2015-12-22

**Permalink:** [http://cordis.europa.eu/project/rcn/44012\\_en.html](http://cordis.europa.eu/project/rcn/44012_en.html)

© European Union, 2015