

» FOCUS ON**ELI-NP, THE SUPER LASER OF THE FUTURE**

ELI-NP (*Extreme Light Infrastructure-Nuclear Physics*) is a new international physics laboratory to be built in Magurele, in Romania. The heart of the project will be a gamma-ray beam (high and ultra-high-energy photons) housed at the IFIN-HH (*Horia Hulubei National Institute of Physics and Nuclear Engineering*) research centre.

ELI-NP, which will study ultra-high-intensity laser-matter interaction, will be one of the three pillars of the ELI project to construct the most advanced laser system in the world, along with the facilities to study secondary sources (in Dolni Brezany, Czech Republic) and attosecond pulses (in Szeged, Hungary).

The ELI-NP laboratory is a very complex facility that will house two extremely high-power machines: a gamma-ray source, based on a high-energy electron linear accelerator and a high-power laser. The unique characteristics of the gamma beam will provide the international scientific community with new opportunities to study high-resolution and high-energy nuclear spectroscopy. ELI-NP will be especially helpful for understanding the mechanisms of stellar nucleosynthesis and the origin of heavy elements in nature. The technology developed here could be used in nuclear waste storage management and to develop new methods for producing isotopes for medical use.

Funded by the Romanian government, with a contribution of 66.8 million euro by the EU, the total cost of the ELI-NP facility will be 300 million euro.

The facility will be constructed by the international consortium EuroGammaS, led by the Italian Institute for Nuclear Physics (INFN), with the collaboration of Sapienza University in Rome, the French National Centre for Scientific Research (CNRS), the UK Science and Technology Facilities Council (STFC) as well as numerous Italian and European organisations.

<http://www.eli-beams.eu/>

<http://www.eli-np.ro/>