

Extreme Light Infrastructure - Nuclear Physics (ELI-NP)
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ELI Nuclear Physics, one of the 4 pillars of ELI, will be built in Bucharest-Magurele, Romania. It is meant as an unique research facility to investigate the impact of very intense electromagnetic radiation on matter, with specific focus on nuclear phenomena and their applications. The extreme light is realized at ELI-NP in two ways: by very high optical laser intensities and by the very intense γ -beam. The High-Power Laser System will consist of two 10 PW lasers, coherently added to get intensities of the order of 10^{23} - 10^{24} W/cm². The High Intensity Gamma Beam System, based on Compton backscattering of a high repetition TW-class laser beam on electron bunches accelerated by a warm LINAC, will produce variable energy gamma beam ($E_\gamma = 0.2 - 19.5$ MeV) with a very good bandwidth (in the 10^{-3} domain). This combination allows for stand-alone experiments with a state-of-art high-intensity laser, standalone high resolution γ -beam experiments or combined experiments of both photon sources. The description of the future ELI-NP facility and of the planned experiments will be presented.