

The Extreme Light Infrastructure (ELI) project is part of an European plan to build a new generation of large research facilities selected by the European Strategy Forum for Research Infrastructures (ESFRI). The mission of the ELI Beamlines is to run an international laser research facility for revolutionary scientific experiments and applications in different areas. ELI will mate its scientific, engineering and medical missions for the benefit of industry and society.

ELI Beamlines will be part of the pan-European ELI project , the world's first international laser facility. It will be open to access for an international and inter-disciplinary user community from academia and industry. Mandated by the international scientific laser community and implemented in the Czech Republic, Hungary and Romania, the ELI project will drive international laser research and laser-based applications to new frontiers, and will fulfill important missions for the regional socio-economic development.

The main mission of ELI Beamlines facility is to become a truly multidisciplinary, user-oriented infrastructure to perform revolutionary scientific experiments and applications in different areas including physics and astrophysics, chemistry, biology, material science, medicine etc. combining advanced synchronized ultra-intense short pulse lasers and secondary sources of particles and x-rays.

ELI Beamlines facility will provide research opportunities at a large portfolio of world-class secondary sources, driven by ultra-intense lasers. These secondary sources, partially based on entirely new concepts, will produce pulses of radiation and particles of highest intensity and beam quality, including electromagnetic radiation over a broad spectral range and charged particles like electrons, protons and ions. A wealth of novel applications is foreseen.

