

ELI Beamlines research centre in Dolní Břežany is part of pan-European infrastructure ELI (Extreme Light Infrastructure) representing a unique tool of support of scientific excellence in Europe by making available its capacities to the best scientific teams across the world. The aim of ELI Beamlines is to establish the most intensive laser system in the world and to operate it on a long-term basis. Due to ultra-high performances of 10 PW (1 petawatt = 1,000,000,000,000,000 watts) and concentrated intensities of over 10^{22} W/cm², we can offer our users a unique source of radiation and beams of accelerated particles. The so called beamlines will enable groundbreaking research in the area of physics and science dealing with materials, but also in biomedicine and laboratory astrophysics and many other fields. ELI Beamlines is part of the Institute of Physics of the Czech Academy of Sciences, and it was open in 2015.

The Institute of Physics of the Czech Academy of Sciences is a holder of the HR Excellence in Research Award. It is awarded by the European Commission to institutions which put significant effort into improving their HR strategy and ensuring professional and ethical working conditions.

At ELI Beamlines, Research Program 2 (RP2) is dedicated to X-rays sources driven by ultrashort high-power laser pulses. The laser-driven undulator X-ray source (LUIS) is designed to provide users with few-nm, few-fs X-ray pulses combined with two auxiliary beams with pulse durations < 30fs and < 7fs at 10Hz repetition rate. The main challenge in this research and development of the LUIS beam line is one of the steps towards stable 'laser-driven' free electron laser.

In our team we have the following position available:

Postdoc

Job description:

- significantly contribute to the design, construction, commissioning and experiments of the LUIS laser-driven wake-field accelerator (LWFA) with focus on the plasma target diagnostics (Stark-broadening, interferometry, Thompson scattering)
- work on the implementation of novel technics applicable for the laser-plasma diagnostics for the LUIS setup
- work in the field of laser-plasma driven electron beam accelerators and their applications as drivers for next-generation light sources. Field of work includes gas target and electrical discharge development, relevant

simulations to improve the laser-plasma diagnostics and development of the control system for the LUIS plasma diagnostics

- work in close collaboration with ELI Beamlines scientists and technical designers, as well as with teams from other collaborating institutions.
- perform according to senior operational decisions or others falling within the scope of the job

Requirements:

- PhD in physics (preferably in the field of laser-plasma diagnostics)
- experience with research in laser-driven wake-field accelerator and relevant diagnostics
- experience in design/installation of the experimental setups and experimental data analysis
- very good written and spoken English

We offer:

- the opportunity to participate in this unique scientific project
- flexible working hours
- nice working environment
- career growth
- lunch vouchers, pension contribution and 5 sick days
- support of leisure time activities

Applications, containing CV, cover letter, contacts of references, and any other material the candidate considers relevant, should be sent to Mrs. Jana Ženíšková, HR specialist (jana.zeniskova@eli-beams.eu, +420 - 601560322).

Information regarding the personal data processing and access to the personal data at the Institute of Physics of the Czech Academy of Sciences can be found on: <https://www.fzu.cz/en/processing-of-personal-data>