ELI Beamlines research centre in Dolní Břežany is a 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 up to 10^{24} W/cm^2, we can offer our users a unique source of radiation and beams of accelerated particles. The so called beamlines will enable ground-breaking 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 a 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 human resources strategy and ensuring professional and ethical working conditions.

The HIFI (High Field Initiative) project has recently begun its work at ELI Beamlines. The HIFI project is established to be the leading project in the high field science. In contrast to other approaches we are emphasizing the synergy between the theory and experiments and building a strong theoretical group to develop new ideas for experiments. In parallel we are building a computing centre aimed at conducting computer simulations. The project will advance our knowledge of laser accelerated electrons and ions as well as high energy photon generation in novel regimes when radiation friction and quantum electrodynamics processes, such as electron-positron pair creation and vacuum polarization, become significant. To explore this regime experimentally an upgrade of the existing at ELI-BL infrastructure around the 10 PW laser beam will be done within the HIFI project.

Postdoctoral Fellow - Theoretical Physicist (IV-103)

The ERT (Excellence Research Team) recruits scientists for developing theory, computer simulations, and for preparing and developing of experiments on high power laser facilities, who will work with Prof. S. V. Bulanov*) and ELI-BL staff on **the following activities:**

- theory of charged particle acceleration and hard electromagnetic radiation in relativistic laser plasmas

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- development and use of numerical techniques (various computer codes) for simulation of nonlinear processes in laser plasmas
- participation in design and conducting experiments for high-field sciences in ELI-Beamlines

Further questions on scientific project can be addressed to Sergei V. Bulanov (e-mail: sergei.bulanov@eli-beams.eu)

Requirements:

- PhD in Physics or Mathematics with the focus on theoretical, computation or experimental physics or equivalent degree
- the candidate is required to have experience in one or several fields of theoretical physics related to nonlinear waves, charged particle acceleration, quantum electrodynamics, numerical modelling of nonlinear processes in plasmas or in experimental plasma physics

We offer:

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

Interviews will begin immediately and the position will stay open until filled.

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**

*) The ERT team leader, Prof. S. V. Bulanov has graduated from Moscow Institute of Physics and Technology (MFTI). He obtained the PhD degree from MFTI in the field of theoretical physics and astrophysics and the Doctor of Sciences degree at the Institute of General Physics RAS in Moscow in the field of plasma physics. S. V. Bulanov is an expert in theoretical astrophysics, in nonlinear wave theory, in the theory of relativistic laser plasmas and in computer simulations. Being theoretician S. V. Bulanov for several years was a leader of experimental group at the KPSI (JAERI-JAEA-QST) institute in Kyoto in Japan. S. V. Bulanov is a recipient of several notable awards: State Prize of the USSR (1982), Hannes Alfvén Prize (2016), Order of Rising Sun with Gold Rays and Rosette (2020). S. V. Bulanov published 2 monographs and more than 600 papers. His citation indexes are: 19000 citations with the h-index equal to 67, according to the Thomson Reuters Web of Knowledge survey engine.

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