ELI-Beamlines will be the high-energy, repetition-rate laser pillar of the ELI (Extreme Light Infrastructure) project. It will be an international facility for both academic and applied research, slated to provide user capability. The main objective of the ELI-Beamlines Project is delivery of ultra-short high-energy pulses for generation and applications of high-brightness short pulse X-ray sources and accelerated particles. The laser systems will be delivering pulses with length ranging between 10 and 150 fs and will provide high-energy Petawatt and 10-PW peak powers. Within the project "Strengthening capacity of research teams in the field of physical sciences" realized by the Institute of Physics AS CR, v.v.i. we are seeking a candidate for the position of:

Postdoctoral Fellow

"High energy electron acceleration with PW-class lasers"

The postdoctoral fellow will focus on the generation, characterization and stabilization of high energy electron beams through laser wakefield acceleration with PW-class lasers. The main goal will be to scale-up the tested experimental geometries for the future electron acceleration beamline envisioned at ELI-Beams.

The successful candidate will participate actively in international and domestic experiments devoted to the optimization of multi-GeV electron sources by laser interaction in underdense plasmas with the use of gas targets (supersonic gas jet, gas puff, gas cell, capillary). The main goal will be to obtain a stable, high energy electron beam. Thus, a substantial part of the work will be dedicated to the optimization of the electron beam pointing, monochromaticity and energy stability. The candidate will carry out in a completely independent way the realization of various experimental campaigns in international high power laser facilities.

We expect from the candidate a general knowledge of ultra-short and high power laser systems, an attested participation in the building-phase of a >100TW laser facility oriented to electron acceleration, a good knowledge of the plasma processes involved in the acceleration of electron and their monitor/control by means of optical diagnostic, participation in large experimental campaigns (1 year at least) on electron acceleration by high power lasers (100TW at least). Ability to perform PIC simulation for under dense plasma in order to predict and analyze optical signal coming from the interested plasma process for electron acceleration is also requested. A basic knowledge of high energy (GeV) electron beam diagnostics is also appreciated but not mandatory.

The candidate is expected to have ability in conducting responsibility situations at work, to solve situations in which team collaboration is essential, to be flexible to work simultaneously on different mid-term projects.

Key Responsibilities:

1. Realization of research tasks assigned by the Mentor.
2. Advising, training, and educating students (3 hours per week)
3. Research stay in selected world-class institutions outside Czech Republic (50 days per year).
4. Publishing in SCI journals.

Key Requirements:

1. Ph.D. in natural sciences or applied sciences or engineering gained within the last 3 years.
2. English language on a very good level (written and spoken).
3. Strong motivation for work and loyalty.
4. Excellent communication and organizational skills.
5. Team player, feel a sense of accomplishment.
6. Willing to travel.

We Offer:

1. Monthly salary of up to 2.400 EUR depending on the quality of candidate.
2. 36 months contract.
3. 5 weeks of holidays.

Requested Documents:

1. CV (English).
2. List of publications (English).
3. Recommendation Letter (English or Czech).
4. Motivation Letter (English).
5. Copy of Ph.D. diploma or certificate (English or Czech)
6. Copy of Ph.D. thesis (hard copy or electronic version)

Deadline: 1 July 2012

Contact:

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