ELI-HU Research and Development Non-Profit Limited Liability Company is announcing

Job openings in Early Stage Researcher and Research Fellow positions in Computational and Applied Materials Science (CAMS) Group within the Attosecond and Strong Field Science Division at ELI-HU

The Hungarian ELI: the Attosecond Light Pulse Source (ALPS)
The first civilian large-scale research facility based on high-power lasers, the Extreme Light Infrastructure (ELI), is to be constructed with international cooperation at three locations with a coordinated management and research strategy. The Attosecond Light Pulse Source (ALPS) research centre to be built in Szeged, Hungary, will be devoted to study of electron dynamics on the femto-, attosecond scale in atoms, molecules, plasmas and biological samples.
The primary mission of the ELI-ALPS is to make a wide range of ultrafast light sources accessible to the user groups of the international scientific community, with special consideration to coherent extreme-ultraviolet (XUV) and x-ray radiations, and to attosecond pulses.

ELI-HU Research and Development Non-Profit Ltd. coordinates the preparation, construction and operation of ELI-ALPS, an international laser research center.

The activity:
Major research activities of CAMS group include structure-function relationships in materials using first principles quantum mechanical calculations based on molecular dynamics, density functional theory and time dependent density functional theory, touching upon different aspects of novel material synthesis, energetics, lower dimensional systems, organometallic substances etc. We attempt to explain/predict the functionalities and material response of nanostructures, solid solutions and molecules, with specific focus on their structure-property relationships, phase and response changes under interaction with electromagnetic fields and the dynamics associated with the electronic motions of the structure.

Applicants are invited for masters/ phd/ postdoctoral positions in
(i) theoretical and computational materials research with particular focus on their technologically relevant properties, (ii) symmetry-driven charge and spin excitation in atomic and molecular systems, and associated applications, (iii) ultrafast electronic processes in two-dimensional systems, carbon based materials and molecules using ground state and time dependent density functional theory.

The candidate should have background in computation and preferably in high performance computing. The successful candidate will conduct research in one or more of the following forefront areas: abinitio simulations of materials, attosecond electron dynamics in low dimensional systems, carbon based materials, ultrafast atomic and molecular processes in intense laser fields, using time-dependent density functional theory, in close collaboration with experimentalists in-house and abroad.

The potential candidate's profile:
The candidate should have background in computations, possibly using density functional theory and/or molecular dynamics (must for postdoctoral candidates), and/or coding through Fortran/ Python/ C++ languages. Experience in high performance computing is additional advantage.

The CAMS group is looking forward to highly motivated self-driven candidates. The candidate must have good written and verbal English communication skills. A solid academic foundation in solid state physics, optics and photonics related field is expected. Knowledge of coding, previous experience in research using density functional theory and time dependent density functional theory are especially advantageous. Familiarity with programming languages Fortran, Python, Mathematica, Matlab etc. would be useful.

1. For *Early Stage Researchers*:

- University students in their last year of an MSc Programme in relevant specialization field (physicist, engineering physicist), assuming that they recently completed or will complete their studies by/around 30th August, 2016.
- PhD students working in relevant research fields;
- Early stage researchers or researchers without doctoral degree.

2. For *Research Fellows*:

- Researchers with doctoral degree or submitted PhD thesis in relevant research field.

We offer:

- Competitive salary
- Attractive fringe benefits
- Challenging job with carrier opportunities
- Pleasant working environment in a brand new infrastructure

During the employment the early stage researchers may have the opportunity to enroll to a PhD program and work for a PhD degree. The successful candidates may have a duty to do part of their research and development work outside Hungary at contracted collaborators and partners of ELI-HU Non-Profit Ltd., as part of their training and education to their specific task.

The application must contain:

- A Europass curriculum vitae or detailed scientific curriculum vitae
- Full list of publications – highlighted the list of articles published in refereed journals and containing the following data:
  - h-index
  - cumulative impact factor (calculated by summing of impact factors of journals characteristic for the year of publication each articles)
  - number of citations without self-citations
- A motivation letter
- The name and address of two scientific supervisors or professors, who could give expert opinion about candidate's skills
- The candidate's postal address and other contact data (phone, fax, e-mail, Skype-ID)

Schedule:

- Application deadline: continuous, valid until withdrawn
- Foreseeable date of the interview for selected candidates: within 4-10 weeks of application submission

For further scientific elaboration and informal discussion on this positions please contact Dr. Franck Lépine at lepine.franck@eli-alps.hu and/or Dr. Mousumi Upadhyay Kahaly mousumi.upadhyaykahaly@eli-alps.hu with your CV.

If you are interested in any of these positions and meet the required criteria, please fill in our Carreer Site with your professional data at http://www.eli-alps.hu/career/. Please use "Early Stage Researcher: CAMS" or "Research Fellow: CAMS" in the subject of your e-mail.