

The Extreme Light Infrastructure (ELI) project is an integral part of the European plan to build the next generation of large research facilities identified and selected by the European Strategy Forum on Research Infrastructures (ESFRI). ELI is the first infrastructure in the world able to investigate interactions between light and matter with the highest intensity, in the so-called ultrarelativistic range. It will open a doorway into new territories within physics as well as establishing such new technical developments as relativistic microelectronics and small laser particle accelerators. ELI will have a considerable impact on numerous fields of material sciences, medicine and environmental protection.

A new Research Fellow position is available in the HR Attosources Group of ELI-ALPS

We are looking for an enthusiastic and skilled researcher with expertise in high-harmonic generation (HHG)/attosecond physics/atomic, molecular and optical (AMO) physics (or closely related disciplines) to participate in various projects managed by the HR Attosources Group of ELI-ALPS. In addition to contributing to designing, building and commissioning various pieces of equipment, the candidate is also expected to take part in user support during the use of beamlines and end-stations that the HR Attosources Group is responsible for.

Description of the HR Attosources Group

The HR Attosources Group of ELI-ALPS is responsible for two gas-based high-harmonic generation beamlines (HR GHHG Gas and HR GHHG Condensed) driven by the 100 kHz high average-power HR laser of ELI-ALPS. The HR GHHG Gas beamline, which is designed for XUV-IR pump-probe studies in gas phase and has been in use since mid-June 2019 (<https://doi.org/10.1088/1361-6455/ab92bf>), is under continuous upgrade and is expected to be user-ready by the beginning of 2021. The HR GHHG Condensed beamline, equipped with a time-delay compensated XUV monochromator for experiments with liquid and solid phase samples, has been producing attosecond pulse trains since June 2020, and its commissioning is expected to be finished in the middle of 2021.

The HR Attosources Group is also responsible for a Velocity Map Imaging (VMI) end-station (to be available from November 2020), while in 2021 the HR GHHG Gas beamline will be equipped with a Reaction Microscope (ReMi or COLTRIMS). Further end-stations and detectors are planned to be installed in the near future and will be accessible for experiments.

Duties and Responsibilities:

The work tasks of the Research Fellow to be hired in the HR Attosources Group include but are not limited to the following:

- Participating in the commissioning, maintenance and operation of various pieces of equipment for ultrafast physics studies in gas, liquid and condensed phases. These include two HHG beamlines incorporating time-of-flight (TOF) and XUV flat-field spectrometers, a VMI end-station, and further experimental apparatus to be installed.

- Provision of user support on the above mentioned research tools.
- Participating in the design and building/assembly of additional group-managed equipment.
- The candidate will have the possibility to carry out own research as well, when beam time is available. Hence it is expected that the candidate has a vision of projects that could be carried out using the available infrastructure.

Education and Experience:

The candidate should hold a PhD in physics, chemistry or other related scientific field (applications of candidates on track to complete their PhD are also considered).

Skills and Abilities:

- The successful candidate is expected to have the ability to work independently in the lab, as well as part of a team.
- Good written and oral communication skills in English.

Additional preferred qualifications:

- Experience in HHG, attosecond physics, AMO physics or related research fields.
- Good programming skills (Python, Matlab).
- Experience with ultrafast lasers and ultrafast optics.
- Ability to lead a (research) project alone.
- Experience in projects where people from different disciplines (physics, engineering, IT) work together.

Job location:

Hungary, Szeged

If you are interested in the position, please upload your CV and motivation letter to our Career Site at <https://www.eli-alps.hu/en/Career>.