

Postdoctoral Researcher – Ultrafast Laser Physicist for Accelerator Diagnostics

University of Dundee & STFC Daresbury Laboratory 3 year fixed term appointment

Background

The University of Dundee and STFC Daresbury Laboratory are seeking a Postdoctoral Researcher to join their research programme in techniques for ultrafast measurement of relativistic particle beams.

The post will develop a range of electro-optic techniques for single-shot temporal profile measurement of electron beams, seeking to push the time resolution for non-destructive particle beam measurements beyond present barriers.

This post is part of our group's international collaboration with the CERN Compact Linear Collider (CLIC) project. The successful candidate will be based in the Beam Diagnostics Group at STFC Daresbury Laboratory, Cheshire, which operates the large-scale R&D test accelerator ALICE (Accelerators and Lasers in Combined Experiments).

List of Duties or Work Programme include

- To develop and implement single-shot optical pulse characterisation systems that extend current electro-optic diagnostic capabilities.
- To examine the potential of alternative nonlinear techniques, such as THz spectral upconversion, and of new materials, for improving accelerator diagnostic capabilities.
- To implement a demonstration system at a suitable particle accelerator facility.
- To provide partial supervision and support of PhD students involved in related research.
- To publish in peer reviewed journals, and present significant results at international conferences

Additional Information

The applicant will have a PhD or equivalent in a relevant discipline (most probably Physics, Applied Physics or Engineering). You will have experience in ultrafast lasers, and in nonlinear optics or THz techniques. Experience or training related to particle accelerators, whilst desirable, is not essential. Where required, training in accelerator physics and technology will be available.

Extended periods of travel to collaborating accelerator laboratories outside the UK will be required. You must have the ability to work in an international group and liaise between researchers in different laboratories.

A competitive salary will be offered.

Further Information

For informal discussions and further information about this post, please contact [Professor Allan Gillespie](mailto:w.a.gillespie@dundee.ac.uk) (University of Dundee, w.a.gillespie@dundee.ac.uk), or [Dr Steven Jamison](mailto:steven.jamison@stfc.ac.uk) (Science and Technologies Facilities Council, steven.jamison@stfc.ac.uk).

Web sites for additional details:

<http://mapsatepm.org.uk/fel/>

<http://www.stfc.ac.uk/ASTeC/Groups/Radio+Frequency+and+Diagnostics/Staff/17494.aspx>