

Postdoctoral researcher – UK FELIX beam-line scientist, Radboud University, Nijmegen NL

We are looking for a beam-line scientist to work at a THz laser spectroscopy facility. You will interact with a diverse team of visiting scientists from the UK, with an exciting programme of semiconductor physics research. There will be opportunities to develop your own interests.

Description of the post:

FELIX is a THz/microwave laser laboratory at the Radboud University, Nijmegen, NL, and the UK maintains beam lines for solid-state physics experiments coordinated through the University of Surrey. You, the Postholder, will be employed by Radboud University, and responsible for running the UK beam line, and supporting UK visitors. The UK also maintains a subscription to the European Magnetic Field Laboratories with a site next to FELIX. They have recently been connected for experiments requiring both high field and THz. There is a wide range of UK visitors performing a variety of different THz techniques on an equally broad set of materials, so this post represents an excellent learning and networking opportunity.

It is not expected that you are already an expert in the following, but experience in some of them (or related techniques) would clearly reduce your learning curve:

1. Pulsed THz optical experiments such as pump-probe, photon echo, Ramsey spectroscopy, non-linear z-scan etc
2. THz-detectors and transport measurement at 300K and at cryogenic temperature.
3. Visible or near-IR laser spectroscopy for two-colour experiments (with the THz).
4. Cyclotron resonance or THz-assisted magneto-transport at high magnetic fields with THz lasers

You will be expected to assist with:

1. preparing set-ups, coordinating logistics of beam-time campaigns, ordering consumables, maintaining/ upgrading apparatus, developing control software.
2. data reduction and analysis, preparing reports for the beam allocation committee, designing follow-on proposals
3. networking with Users at collaboration meetings to help them design experiments with maximum likelihood of success
4. dissemination of results at conferences for publicity and to attract new Users/projects.

There will be opportunities to work on your own projects at the beam-line, and thus this post is an excellent spring-board for an academic research career, with four previous postholders going on to permanent academic/research posts.

Expected description of the postholder:

We welcome applications from researchers of all backgrounds. Gender, race, age, religion or sexual orientation are not barriers to successful application.

We require you to have:

- a higher degree qualification (PhD) or equivalent in the experimental physical sciences or engineering
- excellent interpersonal and communication skills; ideally with experience of working in a diverse international collaborations
- willingness to work flexibly: this includes working outside of regular office hours as required by the allocated beam-time schedule (which will include several evening shifts per month and occasional night shifts).
- a good command of written and spoken English: ability to make oral presentations of results clearly and efficiently, and to draft publication quality manuscripts

It would be a distinct advantage to have :

- experience with some of the techniques mentioned above (THz spectroscopy, pulsed lasers or cryogenics) in an area of semiconductor/solid-state physics.
- the right to travel within the EU without hindrance as you will be required to travel to partner organisations in the UK and the Netherlands on a regular basis

Work environment:

The FELIX Laboratory at Radboud University (Nijmegen, Netherlands) uses intense, short-pulsed infrared and THz free electron lasers for research on matter. The four lasers (FELIX-1, FELIX-2, FELICE and FLARE) each produce their own range of wavelengths and together they provide a tuning range from the mid-infrared to the microwaves between 3 and 1500 μm .

The radiation of the FELIX lasers is coupled to advanced instrumentation in 15 user end stations (including the UK beam lines) and also connects to the high field magnets at the neighbouring HFML laboratory. In user experiments the infrared radiation of the FELIX lasers interacts with molecules and materials, revealing detailed information about 3D structure, functional properties and electronic properties.

The local FELIX research programme is executed by two large in-house user groups: Molecular Structure and Dynamics, and Condensed Matter Spectroscopy. Moreover, the FELIX Laboratory is a large research infrastructure and welcomes external users from all over the world to perform research projects with FELIX. The FELIX Laboratory is embedded in the Institute for Molecules and Materials (IMM) within the Faculty of Science at the Radboud University.

The UK funds two beam lines at FELIX, and about 20% of the beam time is allocated to UK visitors. The main user team is currently dominated by the COMPASSS collaboration (www.compass.net), a silicon quantum information project at University of Surrey and University College London. Recently a new collaboration, FLUENCE (led by Liverpool) has started and the visitor base is expected to broaden.

You will report to Dr Britta Redlich (Chair of the FELIX Board) and Prof Ben Murdin (University of Surrey, Guildford UK; the UK's FELIX Spokesman).

Employment conditions	
FTE	Full time
Salary scale	Standard postdoc rates
Term of contract	2 years renewable to maximum of 4 years depending on performance
Other information	The laser facility operates approximately 16 hours per day in two shifts. The post will require ability to work regular evening shifts (approx. 2-6 per month) and occasionally on weekends if required in preparation for the following week.
Application procedure	By email (with job title in subject): felix@science.ru.nl , n.steward@surrey.ac.uk
Attachments to be included	Applications must include - a curriculum vitae - a motivation statement - the names and contact details of at least two academic referees
Information about the application procedure	Shortlisting will take place on the basis of the written application. Depending on the number and present addresses of the shortlisted candidates we may arrange a skype interview or an in-person interview or both. The interview will include an opportunity to present current research work.
Websites	www.ru.nl/felix , www.ru.nl/imm , www.compass.net
More information	www.ru.nl/felix/about-felix/jobs/