Vacancy Type: Research Only
Department: Physics
Job Title: Research Fellow (104296 - 0721)
Salary: £30,395 - £39,609 per annum (plus an overseas allowance)
Contract Length: 2 years,
Location: European Synchrotron Radiation Facility, Grenoble, France.
Closing Date: 3rd October 2021

Vacancy Overview

The Department of Physics seeks to appoint a postdoctoral research fellow to work as part of the EPSRC National Research Facility (NRF) "XMaS: X-ray Materials Science Facility at the ESRF" which is a long running synchrotron x-ray beamline embedded in the European Photon and Neutron (EPN) Science Campus. Further details about the facility can be found at **www.xmas.ac.uk**.

Recently the facility has been upgraded to match the ESRF EBS upgrade and provide the UK research community with access to a state-of-the-art materials characterisation beamline with extended capabilities across a range of scattering and spectroscopy metrologies including:

- Small-angle X-ray scattering (SAXS) and wide-angle X-ray scattering (WAXS), including the ability to measure at grazing incidence
- Resonant elastic X-ray scattering (REXS)
- High-resolution X-ray diffraction with polarisation analysis
- X-ray absorption spectroscopy (XAS) and X-ray dichroism
- X-ray reflectivity (XRR) and surface X-ray diffraction (SXRD)

The application of these techniques is possible in a range of specialist sample environments to allow *in situ* and *operando* studies with simultaneous control of external variables.

The role aims to augment the expertise of the staff on site and provide enhanced support to users during beamtime. Thus, we would particularly welcome applications from those who have expertise in soft condensed matter and/or energy materials.

It provides an exciting opportunity to develop an independent research programme individually, and in collaboration with user groups. You must be an excellent communicator capable of working effectively both independently and as part of collaborative research teams. You will possess excellent planning and time management skills to ensure your research objectives are achieved effectively.

Please direct all informal inquiries to Prof. Thomas Hase (email: t.p.a.hase@warwick.ac.uk)

Interview Date: TBC

Job Description

Post Title: Research Fellow
Department: Physics
Post Responsible To: Prof. Thomas Hase (Warwick) and Dr Oier Bikondoa (France)

The applicant will be an integral part of the EPSRC National Research Facility XMaS: the UK synchrotron beamline at the European Synchrotron Radiation Facility in Grenoble, France which supports the UK material science communities. The post will be available initially for a period of 24 months with a possible extension to 30 months dependent on continued funding. The XMaS project director at the University of Warwick is Professor Thomas Hase and the successful candidate will work under their supervision with support from Dr. Oier Bikondoa at the beamline. The successful applicant can expect to be seconded to France for a significant portion of the contract, and an additional overseas allowance is paid to cover the cost of living in Grenoble.

A PhD in a related field of materials science, physical chemistry or physics along with expertise in the use of x-rays for materials characterization are required. The appointee will be expected to support beamline users, contribute to the on-site team's development of the facility and in-house research programmes as well as pursue their own independent research. Experience in the design of instrumentation and knowledge of programming with python (or other similar languages) is desirable. The ability to process data and identify data reduction pathways relevant to user needs is welcomed. The applicant must be capable of working independently and as a member of a team.

Job Purpose

The main purpose of the role is to provide underpinning support to the facility: both in its development and in the support of the wider XMaS user community. The post-holder will undertake research to support the work of the XMaS facility to develop and enhance its reputation. They will work with the current XMaS staff to deliver the facility to users against EPSRC defined service level agreements and KPIs. The post-holder will be expected to develop new data reduction pathways to improve the efficiency of experimental time and to encourage more users to the facility.

Duties and Responsibilities

Research and scholarship

- Assist in the operation and development of the XMaS facility
- Engage with users in designing and running experiments.
- Engage with the XMaS team in the design of experimental equipment.
- Pursue an active, independent research programme.
- Be willing to learn new techniques and to apply them in an inter-disciplinary research environment.
- Develop collaborative links with other researchers, both in the UK and internationally
- Publish research results in relevant, peer-reviewed journals.
- Present results of their work at scientific meetings and conferences
- Translate knowledge of advances in the subject area into research activity.

- Present information on research progress and outcomes to bodies supervising research, e.g. steering groups.
- Contribute to the preparation of papers for steering groups and other bodies.
- Communicate complex information (orally and in writing) and material of a specialist or highly technical nature.

Administration and Other Activities

- Ensure compliance with health and safety in all aspects of work.

The duties and responsibilities outlined are not intended to be an exhaustive list but rather to provide guidance on the main aspects of the post. The post-holder will be required to be flexible in his or her duties and communicate well in English, both in writing and in oral presentations.

Person Specification

Post Title: Research Fellow
Department: Physics

The Person Specification focuses on the knowledge, skills, experience and qualifications required to undertake the role effectively.

Requirements **The post-holder must be able to demonstrate the following, measured by** **(a) application form, (b) test/exercise, (c) interview, (d) presentation**	
ESSENTIAL REQUIREMENTS	
• Hold a PhD in a related field of materials science, physical chemistry or physics.	(a), (c)
• Have expertise in the use of X-rays for material characterization.	(a), (c)
• Ability to demonstrate competence and success in the thesis research area (and postdoctoral work, if appropriate).	(a), (c)
• Knowledge of instrumentation associated with synchrotron radiation.	(a), (c)
• Good written and verbal communication skills in English.	(a), (c)
• Have a strong track record of collaboration between research groups.	(a), (c)
• Ability to work as part of a team.	(a), (c)
• Ability to work on own independent research.	(a), (c)
• Ability to communicate effectively in a working environment.	(a), (c)
• Willingness to learn new techniques and apply them in an inter-disciplinary research environment.	(a), (c)
• Willingness to participate in group meetings and to play a role in the upkeep of the XMaS facility by assuming a share of group responsibilities.	(a), (c)

A developing research profile with the ability to publish and/or produce high quality research output.	(a), (c)
Ability to initiate, plan, implement and deliver programmes of research work to defined deadlines.	(a), (c)
An understanding of equal opportunity issues as they may impact on areas of research content.	(a), (c)
An understanding of health and safety, risk assessment and reporting.	(a), (c)
DESIRABLE REQUIREMENTS	
1. Experience with synchrotron radiation and relevant X-ray techniques 2. Experience in the operation of complex instrumentation 3. Knowledge of programming with python (or other similar languages) To augment the current expertise and experience of on the beamline staff we would particularly welcome applications from those who: 4. Have prior experience of working with materials in any of the following areas: • Soft condensed matter • Energy materials 5. Have prior experience with the following techniques • Spectroscopy (energy or wavelength dispersive) • Use and exploitation of KB mirrors • SAXS, GI-SAXS, WAXS • X-ray reflectivity and fluorescence	(a), (c) (a), (c) (a), (c) (a), (c) (a), (c)

Further Particulars

The University
For further information about the University of Warwick, please visit our website at:
www.warwick.ac.uk/services/humanresources/jobsintro/furtherparticulars

XMaS beamline at the ESRF:

XMaS is an EPSRC funded National Research Facility supporting the UK materials science communities. It provides free at the point of access to synchrotron radiation at the European Synchrotron Radiation Facility in Grenoble. A wide range of sample environments allow a diverse set of experiments to be performed using energies in the 2.4 to ~33 keV range. Additional facilities exploiting these sample environments are possible using our laboratory spaces which include a micro-source x-ray facility. The XMaS facility is currently run by 4 on-site staff; Dr Didier Wermeille, Dr Laurence Bouchenoire, Dr Oier Bikondoa and Mr Paul Thompson. The project is run jointly by the University of Liverpool (Project director: Prof. Chris Lucas) and the University of Warwick (Project director: Prof. Tom Hase). More details can be found on the website: **http://www.xmas.ac.uk.**

The Department of Physics
For further information about the Department of Physics, please visit our website at:
www.warwick.ac.uk/fac/sci/physics

The Physics Department and the University of Warwick are proud of their diverse community of staff, students, and visitors, and are committed to maintaining an excellent record in teaching and research by ensuring that there is equality of opportunity for all, fostered in an environment of mutual respect and dignity.

Both the Physics Department and the University of Warwick hold Athena SWAN Silver awards, a national initiative to promote gender equality for all staff and students. The Physics Department is also a Juno Champion, which is an award from the Institute of Physics to recognise our efforts to address the under-representation of women in university physics and to encourage better practice for both women and men.

Further information can be found at www.warwick.ac.uk/physics/staff/working/.