DEPARTMENT OF PHYSICS

Job description and selection criteria

Job title	Postdoctoral Research Assistant in Organic Solar Cells
Division	Mathematical, Physical & Life Sciences Division
Department	Department of Physics
Location	Clarendon Laboratory, Parks Road, Oxford, OX1 3PU
Grade and salary	Grade 7: £29,837 – £36,661 pa
Hours	Full time
Contract type	Fixed-term until 30th June 2017
Reporting to	Dr Moritz Riede, Associate Professor
Vacancy reference	113827
Additional information	Closing date – midday (UK time) on Monday 21st July 2014

Introduction

The University

The University of Oxford is a complex and stimulating organisation, which enjoys an international reputation as a world-class centre of excellence in research and teaching. It employs over 10,000 staff and has a student population of over 22,000.

Most staff are directly appointed and managed by one of the University's 130 departments or other units within a highly devolved operational structure - this includes over 6,500 'academic-related' staff (postgraduate research, computing, senior library, and administrative staff) and over 2,700 'support' staff (including clerical, library, technical, and manual staff). There are also over 1,600 academic staff (professors, readers, lecturers), whose appointments are in the main overseen by a combination of broader divisional and local faculty board/departmental structures. Academics are generally all also employed by one of the 38 constituent colleges of the University as well as by the central University itself.

Our annual income in 2012/13 was £1,086.9m. Oxford is one of Europe's most innovative and entrepreneurial universities: income from external research contracts exceeds £436.8m p.a., and more than 80 spin-off companies have been created.

For more information please visit www.ox.ac.uk/staff/about_the_university.html

Athena SWAN Charter

The University of Oxford is a member of the Athena SWAN Charter and holds an institutional Bronze Athena SWAN award. The Department of Physics holds a departmental Bronze Athena SWAN award in recognition of its efforts to introduce organisational and cultural practices that promote gender equality in SET and create a better working environment for both men and women.

Mathematical, Physical & Life Sciences Division

The Mathematical, Physical and Life Sciences (MPLS) Division is one of the four academic divisions of the University of Oxford. We have over 6,000 students and research staff, and generate over half of our funding from external research grants.

The MPLS Division's 10 departments and 3 interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. Our research addresses major societal and technological challenges and is increasingly interdisciplinary in nature. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities.
Today's scientific research not only crosses traditional subject boundaries, but also transcends national boundaries: MPLS scientists collaborate with researchers from around the world, and play leading roles in many international projects.
For more information please visit: http://www.mpls.ox.ac.uk/home

Department of Physics

The Department of Physics at the University of Oxford is one of the largest in the United Kingdom, and has a world-leading research programme. The Department's research strategy is designed to preserve and enhance Oxford's reputation as one of the top ten physics departments in the world. The Department was awarded the highest rating of 5* in the 2001 Research Assessment Exercise, and was second in the country in the RAE 2008

Power League compiled by Research Fortnight. There are over 90 members of academic staff (Professors, Readers and Lecturers) whose work is supported by about 140 technical and secretarial staff. The undergraduate intake is approximately 180 students per year, and at the present time there are over 300 students studying for postgraduate degrees, and approximately 190 postdoctoral and research fellows. Detailed information about the Department of Physics may be found at http://www.physics.ox.ac.uk.

Sub-department Condensed Matter Physics

The post-holder will be based in the Condensed Matter Physics sub-department, which is one of the six sub-departments that together make up the Department of Physics; these are Astrophysics, Atomic and Laser Physics, Atmospheric, Oceanic and Planetary Physics, Condensed Matter Physics, Particle Physics and Theoretical Physics, with a seventh function (Central Physics) providing administrative and technical support to these sub-departments. Members of all sub-departments take part in research, teaching and matters such as examinations, discussion of syllabi, lectures and liaison with undergraduates and postgraduate students.

At present there are 25 academic and research staff, four research and postdoctoral fellows, about 40 postdoctoral research assistants and approximately 90 research students attached to the sub-department. The Condensed Matter Physics research programmes are described at http://www2.physics.ox.ac.uk/research/condensed-matter-physics. They fall broadly into three categories: Semiconductor Materials, Devices and Nanostructures; Biological Physics; Quantum materials.

Ongoing research on Semiconductor Materials, Devices and Nanostructures (SMND) has broad relevance to photonics, nano-science, optoelectronics and energy research such as photovoltaics. The group is part of the interdisciplinary SMND research network across several departments within the University of Oxford's Mathematical, Physical and Life Sciences Division. Oxford has excellent facilities for fabrication, manipulation and characterization of soft functional materials and good links to the nearby Rutherford Appleton Laboratories where the Diamond Synchrotron Light Source (http://diamond.ac.uk) and the ISIS Muon and Neutron Source (http://www.isis.stfc.ac.uk/) are located.

Prospective candidates wishing to discuss their application are welcome to contact Moritz Riede (ph: +44 (0) 1865 272377; email: moritz.riede@physics.ox.ac.uk).

Job description

Research topic	Microstructural Characterisation of Organic Solar Cells
Principal Investigator / supervisor	Dr Moritz Riede, Associate Professor
Project team	Merck Chemicals Ltd, K.J. Lesker Ltd, Eight19 Ltd, Oxford Photovoltaics Ltd, Diamond Light Source, ISIS Muon and Neutron Source
Project web site	http://www2.physics.ox.ac.uk/contacts/people/riede
Funding partner	The funds supporting this research project are provided by the Science and Technology Facilities Council (STFC) in the framework of the CLASP programme
Recent publications	

Technical skills	A degree in Physics, Chemistry, Material Science or Engineering is essential as well as experience in X-ray scattering and further microstructural characterisation techniques preferably for organic semiconductors. A background in photovoltaics would be an advantage.

Overview of the role

The main role of your job is to carry out the microstructural characterisation of thin organic films made in house or by our industrial partners using synchrotron X-rays and neutrons in collaboration with Diamond Light Source and ISIS Muon and Neutron Source near Oxford. You will have the unique possibility to work with state-of-the-art systems and industrially relevant samples in an exciting interdisciplinary environment. The obtained better understanding the microstructure of thin organic films and the underlying structure-property relationships will be invaluable in terms of time and cost saving potential for the commercialisation of this technology.

Your role is central part of a Challenge Led Applied Systems Programme (CLASP) project by run by STFC External Innovations to support the application and commercialisation of STFC research in four key global research challenge areas including “Energy”. Our project “Structure-Property Relationships: Enabling a faster Commercialisation of Organic Solar Cells” falls into the area “Energy” has the goal to advance the understanding of the microstructure of thin organic films and its consequences on the performance of the organic films in solar cells. The project consortium consists of four industrial partners (Merck Chemicals Ltd, K.J. Lesker Ltd, Eight19 Ltd, Oxford Photovoltaics Ltd) and three academic partners (Diamond, ISIS, University of Oxford). This collaboration is along the complete value chain of organic solar cells from molecules to solar modules.

Responsibilities/duties

- Undertake the research activities described in the Project description of work and as requested by Supervisor.
- Adapt existing and develop new scientific techniques and experimental protocols.
- Test hypotheses and analyse scientific data from a variety of sources, reviewing and refining working hypotheses as appropriate.
- Contribute ideas for new research projects.
- Undertake comprehensive and systematic literature reviews and write up the results for publication in peer-reviewed journals.
- Collaborate in the preparation of scientific reports and journal articles and occasionally present papers and posters.
- Use specialist scientific equipment in a laboratory environment.
- Act as a source of information and advice to other members of the group on scientific protocols and experimental techniques.
- Represent the research group at external meetings/seminars, either with other members of the group or alone.
- Communicate and coordinate the experiments with the project partners including planning of beamtime at synchrotron and neutron sources.

The post-holder will have the opportunity to teach. This may include lecturing, small group teaching, and tutoring of undergraduates and graduate students.

Selection criteria

Essential

- Applicants should possess, or be very close to obtaining a doctorate in Physics, Chemistry, Material Science or Engineering.
- Applicants should possess a degree in Physics, Chemistry, Material Science or Engineering.
- A strong background and track record in X-rays and/or neutron for microstructural characterisation of crystals, powders and thin films.
- Good interpersonal and communications skills and the ability to work as part of a team.
- Experience with organic semiconductors

Desirable

- Experience with working at synchrotron and/or neutron sources
- Solar cell know how
- The ability to direct own research and interpret results independently.
- Keen interest in renewable energies.

Working at the University of Oxford

For further information about working at Oxford, please see:

http://www.ox.ac.uk/about/jobs/research/

How to apply

If you consider that you meet the selection criteria, click on the **Apply Now** button on the 'Job Details' page and follow the on-screen instructions to register as a user. You will then be required to complete a number of screens with your application details, relating to your skills and experience. When prompted, please provide details of two referees and indicate whether we can contact them at this stage. You will also be required to upload a CV and a one-page statement of research interests as well as how you think you fulfil each of the essential and desirable criteria of the post (see above). Your application will be judged solely on the basis of how you demonstrate that that you meet the selection criteria outlined above and we are happy to consider evidence of transferable skills or experience which you may have gained outside the context of paid employment or education.

Please save all uploaded documents to show your name and the document type.

All applications must be received by **midday** on the closing date stated in the online advertisement.

Information for Priority Candidates

*A priority candidate is a University employee who is seeking redeployment owing to the fact that he or she has been advised that they are at risk of redundancy, or on grounds of ill-health/disability. Priority candidates are issued with a redeployment letter by their employing departments and this letter **must** be attached to any application they submit.*

If you are applying for a post within the Department of Physics as a priority candidate, please contact the HR Manager at the following address to alert him to your application – j.gillic1@physics.ox.ac.uk

Full details of the priority application process are available at:
www.admin.ox.ac.uk/personnel/end/red/redproc/prioritycandidate

Should you experience any difficulties using the online application system, please email recruitment.support@admin.ox.ac.uk

To return to the online application at any stage, please click on the following link www.recruit.ox.ac.uk

Please note that you will be notified of the progress of your application by automatic e-mails from our e-recruitment system. **Please check your spam/junk mail** regularly to ensure that you receive all e-mails.