



THE POST

College: [College of Engineering, Mathematics and Physical Sciences](#)

Post: **Postdoctoral Research Fellow**

Reference No: **P62621**

Grade: **F**

HERA: **RFEL**

Reporting To: **Professor William Barnes**

The above full-time post is available from 01 September 2018 for up to 48 months (project ends on August 31, 2022) in the College of Engineering, Mathematics and Physical Sciences.

Job Description

Main purpose of the job:

This Postdoctoral Research Fellow (post-doc) is part of a major research project at Exeter based on the award of an ERC Advanced Investigator grant to Prof Bill Barnes in the area of photonic materials. The overall aim of the project is to harness the interaction between light and matter to change material properties. One example of this is to use strong coupling between molecules and confined light (e.g. light in an optical microcavity or within a plasmon mode) to change molecular energy levels and thereby develop a new approach to controlling chemistry. The Postdoctoral Research Fellow will take the lead on the project for research in the area of strong coupling, both to better understand the underlying science and to make use of that science (through collaboration) in materials science, chemistry and biology. The post holder will be a key member of this exciting new project and will work closely with the project leader, Prof. Bill Barnes. The Postdoctoral Research Fellow is expected to undertake primarily experimental work.

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
 - Acting as principal investigator on research projects;
 - Driving the development of an understanding of the science underlying the phenomena investigated;
 - Helping to develop research ideas, projects and proposals;
 - Conducting individual and collaborative research projects, making and developing national and international collaborations;
 - Identifying sources of funding and contributing to the process of securing funds;
 - Writing and contributing to dissemination of research findings, through publications and presentations and exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Resolving problems of meeting research objectives and deadlines;
 - Assisting in the running of research meetings, workshops and conferences;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on / following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.
2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.

3. To act as research team leader including:
 - Mentoring colleagues with less experience and advising on their professional development;
 - Coaching and supporting colleagues in developing their research techniques;
 - Supervising the work of others, for example in research teams or projects;
 - Developing productive working relationships with other members of staff;
 - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
 - Dealing with standard problems and helping colleagues to resolve their concerns about progress in research.

4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media, and to present the results of scientific research to sponsors and at conferences.

5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
 - Managing the use of research resources and ensure that effective use is made of them;
 - Monitoring and reporting on the use of research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification

Competency	Essential	Desirable
Attainments/Qualifications	PhD or equivalent qualification/experience in a related field of study (probably Physics, but possibly materials science or physical chemistry).	Be an authority in a relevant subject area, as indicated through response to existing published output.
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies. Record of research output in high quality publications.	Familiarity with optical experiments and with nanophotonics more generally,
Prior Experience	Successful management of own research.	Experience of working in collaboration with other research groups. Experience of undergraduate /postgraduate teaching and supervision. Experience of acting as principal investigator on research projects.
Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate complex and concepts and ideas to a range of audiences.	Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.

	Able to balance the pressures of research, administrative demands and competing deadlines.	
Circumstances or Additional Competencies/Experience	An interest in inter/multidisciplinary research is essential.	Prior experience in nanofabrication, nano-optics and optical spectroscopy an advantage, is experience of numerical modelling and programming.

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Prof. Bill Barnes. Email: w.l.barnes@exeter.ac.uk.

Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

Please see our [website](#) for further information on working at the University of Exeter.