

THE POST

College /Service:	College of Engineering, Mathematics & Physical Sciences http://emps.exeter.ac.uk/
Post:	Associate Research Fellow/Research Fellow in Deep Raman for Novel Breast Disease Diagnostics
Reference No:	P44865
Grade:	E/F
Reporting To:	Prof Nick Stone

The above full-time fixed term posts are available from 01 July 2013 for 36 months in the College of Engineering, Mathematics and Physical Sciences.

Job Description

The role of this postdoctoral position will be to undertake research into the development novel deep Raman systems for use in vivo for the real-time detection and diagnosis of breast cancers and surgical targeting within the breast. The technique will utilise near-infrared light to probe the disease specific molecular composition of breast tissue and associated lymph nodes in vivo and in real-time using deep Raman spectroscopy. The project is funded under the EPSRC Healthcare Technology Programme. This project is in partnership with Prof Pavel Matousek at the Rutherford Appleton Laboratory and local NHS healthcare providers. We have a long standing relationship of working together.

The position advertised here will be based at the University of Exeter, but will involve some working at the Rutherford Appleton Labs and occasionally at Gloucestershire and Exeter Hospitals. The postdoctoral fellows will be required to develop novel sampling configurations and optical designs, measure tissue optical properties and model photon migration, testing the designs both in the non-clinical environment initially and then in the clinical environment with ex vivo tissues. This will involve some optical modelling; development and manufacture of optimum designs; spectral measurement of clinical samples; and developing and testing of multivariate diagnostic algorithms to discriminate disease conditions using the probes.

The role will involve day-to-day responsibility for the project progress and some support for postgraduate students working in the area.

Main purpose of the job:

Undertake research into the development of novel methodologies for rapid in vivo measurements of disease specific tissue composition using Raman needle probes.

ASSOCIATE RESEARCH FELLOW

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study including:
 - Conducting the collaborative research project outlined above.
 - Collecting and interpreting experimental data;
 - Writing up research work for publication and general public awareness;
 - Developing research objectives and proposals for own or joint research;

- Making presentations at national and international conferences and similar events;
 - Dealing with problems which may affect the achievement of research objectives and deadlines;
 - Analysing and interpreting the results of own research and generating original ideas based on outcomes;
 - Acquiring skills in and using new research techniques and methods;
 - Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio;
 - Using creativity to analyse and interpret research data and draw conclusions on the outcomes.
2. To contribute to teaching and to be involved in the assessment of student knowledge including assisting in the supervision of student projects and in the development of student research skills.
 3. To work in collaboration with colleagues as appropriate to the field of study including:
 - Contributing to collaborative decision making within the research group;
 - Contributing to the production of collaborative research reports and publications.
 - Preparing papers and presenting information on research progress and outcomes to bodies supervising research, e.g. steering groups.
 4. To communicate complex information, orally, in writing and electronically.
 5. To prepare proposals and applications to external bodies, e.g. for funding and contractual purposes
 6. To contribute to the planning of research projects.
 7. To use research resources, laboratories and workshops as appropriate and to take responsibility for conducting risk assessments, reducing hazards and for the health and safety of themselves and others.
 8. To monitor and assist in the management of research budgets as appropriate.
 9. To engage in continuous professional development and to be responsible for continually updating knowledge and understanding in field of study or specialism and for developing skills.

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 in a related field of study.	
Skills and Understanding	Sufficient knowledge in the discipline and of research methods and techniques to work within established research programmes.	Evidence of research activity and published research.
Prior Experience	Experience of undertaking detailed studies using vibrational spectroscopy (IR or Raman). Experience of conducting risk assessments and understanding of health and safety legislation.	Experience of building / modifying optical / spectroscopic instrumentations. Experience of tissue/cell handling. Experience of novel clinical diagnostics. Utilised multivariate data analysis / Chemometrics. Experience of modelling photon migration in tissues Experience of writing and modifying tools in Matlab. Experience of undergraduate teaching.

Behavioural Characteristics	<p>Good written and verbal communication skills.</p> <p>Able to communicate material of a specialist or highly technical nature.</p> <p>Able to manage research and administrative activities and to balance the competing pressures of research and administrative demands and deadlines.</p> <p>Able to liaise with colleagues and students.</p> <p>Able to build contacts and participate in internal and external networks for the exchange of information and collaboration.</p> <p>Able to identify potential sources of funding.</p> <p>Actively participate as a member of a research team</p> <p>Engage in continuous professional development.</p> <p>Understand equal opportunity issues as they may impact on areas of research content</p>	
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RESEARCH FELLOW

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study including:
 - Acting as principal investigator on research projects;
 - Developing research objectives, projects and proposals;
 - Conducting individual or collaborative research projects;
 - Identifying sources of funding and contributing to the process of securing funds;
 - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
 - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
 - Making presentations at conferences or exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Developing new concepts and ideas to extend intellectual understanding;
 - Resolving problems of meeting research objectives and deadlines;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on 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 help 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. To plan, co-ordinate and implement research programmes including:
 - Managing the use of research resources and ensure that effective use is made of them;
 - Managing research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Planning and managing 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	Be a nationally recognised authority in the subject area. PhD or equivalent in a related field of study.	
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop research programmes and methodologies. Record of research output in nationally recognised publications.	
Prior Experience	Experience of undertaking detailed studies using vibrational spectroscopy (IR or Raman). Experience of teaching at undergraduate level. Experience of managing research projects and research teams. Successful in obtaining grant funding.	Experience of building / modifying optical / spectroscopic instrumentations. Experience of tissue/cell handling. Experience of novel clinical diagnostics. Utilised multivariate data analysis / Chemometrics. Experience of modelling photon migration in tissues Experience of writing and modifying tools in Matlab. Experience of 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 conceptual ideas to a range of groups. Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking. Able to participate in and develop external networks. 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.	
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Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Professor Nick Stone, Professor of Biomedical Imaging and Biosensing, telephone (01392 726531) or email n.stone@exeter.ac.uk.

Additional Information Relating to the Post

Salary

The starting salary will be from £24,766 per annum on Grade E up to £34,223 per annum on Grade F, depending on qualifications and experience.

Hours of work

There are no specific hours of work but staff are required to work such hours as are necessary to carry out the duties associated with the appointment

Annual Leave

The annual leave entitlement for full-time appointments is 41 days per calendar year (pro rata for part-time appointments). For further information see our website <http://www.admin.ex.ac.uk/personnel/leave.shtml>.

Probationary Period

The appointment will normally be subject to a probationary period of one year.

Right to Work in the United Kingdom

If you do not have the right to work in the UK, this appointment will be subject to the University successfully obtaining a Certificate of Sponsorship under the UK's Points Based System for migrant workers and to you obtaining Entry Clearance/Leave to Remain.

For further information, see the links to the UK Border Agency and UK Visas websites at <http://www.exeter.ac.uk/working/new/international/>. In particular you are encouraged to undertake a self assessment of your eligibility to work in the UK using the link to www.ukba.homeoffice.gov.uk/pointscalculator.

Terms & Conditions

The Terms and Conditions of Employment can be viewed on line by visiting <http://www.exeter.ac.uk/staff/employment/conditions/terms/>

Pensions

Membership of the Universities' Superannuation Scheme (USS) is automatic provided that you meet the qualifying criteria for membership. The USS is a contracted-out scheme. USS scheme has two sections: Final Salary and Career Revalued Benefits; which section you will be eligible for will depend on any previous membership of USS. An information leaflet concerning the qualification rules for both the sections is enclosed; more detailed information about the USS scheme structure can be found at www.uss.co.uk. **IF you have been in USS before, you are strongly requested to contact the Pay and Benefits Office as soon as you can so that possible membership of the Final Salary benefits section can be investigated.** The University, as your employer, contributes such sums as will be required to maintain the full benefits of the scheme. You may opt out of the scheme; if you wish to do so, you should contact the Pay and Benefits Manager, Mrs Alison Rose (01392 263088/email a.j.rose@exeter.ac.uk) for further information. Further information about Pension Salary Exchange is available from the Human Resources website www.admin.exeter.ac.uk/personnel or from the Pensions Office.

Relocation

You may be able to claim relocation expenses in accordance with the University's Relocation Assistance Scheme. The maximum allowance that you can reclaim under the Relocation Assistance Scheme, if eligible, is 10% of salary.

Short-listing Information

We will acknowledge your application by email. The University of Exeter recognises the time and effort taken to apply for a position and will contact you by email to inform you of results of shortlisting

Application Procedure and Interview Information

The closing date for completed applications is **17 April 2013**. Interviews are expected to take place late April / early May 2013.

Data Protection Act (1998)

The information contained within your application is being requested to enable the University to make employment decisions and meet statutory obligations. Any information provided to the University in this context will be treated confidentially and used only by manager(s), member of the University, Human Resources, Superannuation and Payroll during the course of your employment. Where the application relates to a post which is externally funded this information may be passed onto the relevant funding body.