



## THE POST

**College:** Living Systems Institute (College of Engineering, Mathematics and Physical Sciences)

**Post:** Postdoctoral Research Associate

**Reference No:** P57398

**Grade:** E

**Reporting To:** Dr. Daniel Kattnig

### Job Description

#### Main purpose of the job:

The project involves modelling spin dynamic processes (on the basis of the stochastic Liouville equation of the spin density matrix) that impart magnetic field sensitivity to radical pair reactions and/or the experimental study of magnetic field effects in model systems.

#### Main duties and accountabilities:

1. To undertake research as appropriate to the field of study including:
  - Writing up research work for publication;
  - 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;
  - 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 reducing hazards and for the health and safety of others. Where appropriate, will also be responsible for conducting risk assessments.

8. To monitor 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**

<b>Competency</b>	<b>Essential</b>	<b>Desirable</b>
Attainments/Qualifications	PhD (or nearing completion) or equivalent qualification/experience 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; a solid understanding of spin dynamic processes through theoretical studies in magnetic field effects, magnetic resonance or a similar subject area; expertise in the following fields is desirable: quantum mechanics, computational chemistry, the theory of diffusion assisted reactions, radical chemistry, photo-chemistry, optical spectroscopy, electron spin resonance, fluorescence spectroscopy, laser spectroscopy.
	Ability to write programs in a scripting language such as Python, Matlab, or Julia, or Fortran and/or C	Experience in high-performance computing, and a good understanding of numerical mathematics (with an emphasis on linear algebra and sparse matrix calculations), experience in (the programming of) instrument control and data acquisition (e.g. LabVIEW, C, Matlab).
Prior Experience	Understanding of health and safety legislation	Experience of undergraduate teaching
	Experiences in grant applications.	Eagerness to work towards a fellowship application.
Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate material of a specialist or highly technical nature. Able to manage research and administrative activities and to balance the competing pressures of research and administrative demands and deadlines. Able to liaise with colleagues and students. Able to build contacts and participate in internal and external networks for the exchange of information and collaboration. Able to identify potential sources of funding.	

	Actively participate as a member of a research team Engage in continuous professional development. Understand equal opportunity issues as they may impact on areas of research content Where appropriate to the role, willingness to undergo training in order to conduct risk assessments	
Circumstances	Willing to work flexibly to achieve project demands	

**Informal Enquiries**

Before submitting an application you may wish to discuss the post further by contacting Dr. Daniel Kattnig, Senior Lecturer, telephone (01392/01326 7479) or email [d.r.kattnig@exeter.ac.uk](mailto:d.r.kattnig@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.