



THE POST

Faculty:	ESE
Post:	Postdoctoral Research Fellow (Ultrafast control of 2D magnets)
Reference No:	Q08905
Grade:	F
Reporting To:	Maciej Dąbrowski

Job Description

Main purpose of the job:

The project aims to demonstrate how charge transfer can manipulate magnetic order and exciton properties in van der Waals heterostructures. The successful candidate will fabricate heterostructures using mechanical exfoliation and characterize their static magnetic properties, such as magnetic domains. The primary experimental work will focus on time-resolved pump–probe measurements with ultrafast lasers to reveal photo-induced charge transfer and associated changes in magnetic order. The role will also include fabricating and characterizing devices to demonstrate quasi-control of magnetic order using electrostatic gating.

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:
 - Fabricating and characterizing van der Waals heterostructures;
 - Conducting time-resolved pump–probe optical measurements with ultrafast lasers;
 - Developing the existing experimental setups to achieve the objectives of the research project;
 - Fabricating heterostructures with electrical contacts for electrostatic gating;
 - Performing magneto-optical measurements at high magnetic fields and cryogenic temperatures;
 - 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;
 - Resolving problems of meeting research objectives and deadlines;
 - Adhering to health and safety rules;
 - 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 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. 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 ensuring 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.	Be a nationally recognised authority in the subject area.
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.	
Prior Experience	Experience of managing research projects and research teams.	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 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 balance the pressures of research, administrative demands and competing deadlines.	Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.

	An understanding of the importance of equality and diversity within an organisation and a commitment to helping create an inclusive culture.	
Circumstances		

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Maciej Dąbrowski m.k.dabrowski@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.