

Job Summary

Job Title: Research Associate

Grade: 7

Salary: £32,958 to £37,075 per annum

Department: Chemistry

Contract: Full-time, fixed-term position available for 2 years

Job Reference: SEN00807

Role Purpose

To provide a leading role in a research project exploring weak interactions between alkanes and water clusters, which are of importance in natural gas hydrates. Natural gas hydrates form the biggest single source of fossil fuels on earth. Complexes between alkane and water molecules will be formed inside superfluid liquid helium nanodroplets. Helium nanodroplets are clusters of helium, ranging in size from a few tens of atoms up to many millions. Their huge thermal conductivity coupled with a very low temperature (0.4 K) make them an exotic and unique environment for studying various phenomena, including intermolecular forces. You will apply laser infrared spectroscopy to extract new information of relevance to models of gas hydrates.

This project will appeal to someone with a background in a relevant area of physical chemistry or chemical physics and who would like to be involved in cutting-edge experiments. You will join a research group which is extremely well equipped, with three helium nanodroplet instruments along with other spectroscopic and nanoscience experiments. Multiple laser systems are available for spectroscopic work and the research team is composed of a healthy mix of PhD students and postdoctoral workers. The appointed person will be expected to take a leading role in experimental design and operation and will play the lead role in delivering the goals of the research programme. The appointed person will also be expected to supervise PhD students and undergraduate research projects students as part of their activities. Furthermore, there is the opportunity to gain some modest teaching experience, such as small group tutoring, during the course of this postdoctoral position

Principal Responsibilities	% Time
Plan and carry out the research programme, giving guidance to other members of the team.	50
Analysis of data and extrapolation of new themes/strands in area of research.	20
Writing up research findings for dissemination amongst the research team and broader international community.	10
Take a lead in presenting results at scientific meetings in the UK and overseas.	5



Participate in general laboratory activities to ensure the efficient functioning of the lab.	5
Adhere to health and safety procedures affecting self and others at all times and to help the lab safety officer enforcing good safety practice in the lab.	5
Undertake other such duties consistent with the grade of the post as may be reasonably required.	5
Internal and External Relationships	
<ul style="list-style-type: none"> • A minimum of weekly reporting to the Academic group leader regarding progress of the project, and often on a daily basis • Academics, postdocs, postgrads and technicians within the laboratory to liaise on a daily basis regarding availability of equipment and materials, exchange of information, etc. • Other members of the department for critical discussion of the research and exchange of new ideas and approaches that might benefit the research • Dealing with external collaborators at other institutions regarding data analysis and other research-related issues 	
Planning and Organising	
Plan research activity as outlined in the project proposal and coordinate the work of associated workshop technicians, PhD students and undergraduate research students.	
Qualifications, Knowledge and Experience	
<p>Essential</p> <ul style="list-style-type: none"> • A PhD degree, or be close to completing a PhD, in a subject relevant to this research area (e.g. laser spectroscopy, molecular beams, chemical dynamics, mass spectrometry)* • Evidence of research productivity (e.g. research publications of suitable quality in peer-reviewed journals, presentations, etc.)* • Evidence of involvement in innovative research • Knowledge of research field 	



Desirable

- Experience in supervising students*
- Experience of writing scientific manuscripts
- Experience of collaborative work.

Skills, Abilities and Competencies

Essential

- Good working knowledge of vacuum technology*
- Ability to work well in a team
- High level of proficiency in English, sufficient to undertake research, teaching and administrative activities utilising English Language materials and to communicate complex information effectively with staff and students*
- Good written* and oral communication skills
- Effective interpersonal skills
- Ability to plan, implement and deliver programmes of work
- Proven analytical and technical/scientific problem-solving capability
- The ability to demonstrate leadership skills throughout the team including problem solving (e.g. methodology and techniques)
- Evidence of continued personal development of subject expertise
- Ability to communicate complex information clearly

Desirable

- Well-developed experimental skills of relevance to the planned research project, especially laser operation, optics, etc.
- Knowledge and experience in quantum chemical calculations
- Good understanding of Health and Safety regulations and procedures

**Criteria to be used in shortlisting candidates for interview*



Equality and Diversity

The University of Leicester is committed to positively advancing equality of opportunity. We participate in a number of equalities initiatives which celebrate good employment practice for the advancement of diversity and equality. These include the Stonewall Workplace Equality Index, the Race Equality Charter and [Athena Swan](#) (for which we are currently Bronze award holders).

We are proud to be selected as one of only ten Universities internationally to be an impact champion for [HeForShe](#), a global solidarity movement for gender equality. We also have a number of staff equality fora who champion the advancement of equalities for diverse groups. To find out more please visit the [Equalities](#) webpage.

Staff Benefits

- 24 days annual leave plus 6 closure days plus bank holidays
- Pension
- Discounted gym membership
- Childcare voucher schemes

