

Research Associate in High Energy Materials Synthesis II

Job Ref: REQ220062

Department of Chemistry

Project Description

Applications are invited for a postdoctoral research associate in Advanced Energetic Materials synthesis. This is a [dstl] funded position to work with Prof Steve Christie (in collaboration with Prof Paul Kelly, Dr George Weaver and Dr Jim Reynolds, Chemistry, Loughborough University) on the development of automated routes to high energy materials, including developing advanced analytical techniques for their characterisation. The successful candidate will join a research team combining expertise in organic and inorganic synthesis, flow chemistry, automation and analysis.

The successful candidate will automate the synthesis of a series of potentially high energy materials. It will require automating routes to high energy materials; designing and controlling automation equipment; incorporating high end analytical equipment to study the new materials; and close collaboration with a parallel PDRA position looking at new synthetic routes to high energy materials. This position is ideally suited for an ambitious early career researcher with a background in synthesis including design of specialised reactions and reactors. The successful candidate will be highly motivated with an excellent research track record and a desire to pursue multidisciplinary research.

This is a full-time position until 14 December 2023

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose: This is a [dstl] funded PDRA project to synthesise new high energy materials.

Job Duties

RESEARCH AND SCHOLARSHIP

- Carry out the automated synthesis and characterisation of new high energy materials.
- Design of new reactors to conduct the research in a safe and efficient manner.
- Adapt novel analytical methods for the study of high energy materials.
- Develop an automated process with high-end characterisation protocols
- Analyse the data obtained and discuss interpretation of results.
- Lead the preparation of research articles for submission to high-quality chemistry journals.
- Continually update knowledge and understanding in the field and translate advances into research activity.
- Plan and manage research activities in collaboration with others, with guidance if required.
- Communicate research material at meetings with the funding body.
- Assist with the preparation of proposals and applications for funding to external bodies.
- Interact effectively with collaborators/funders during the project.

TEACHING AND LEARNING

- Assist in the supervision and management of undergraduate (MChem/MSc) research projects.
- Where appropriate, deliver teaching and tutorial sessions to undergraduate students.
- May assist in the development of student research skills.
- Engage in training programmes in the University (e.g. through staff development), which are consistent with your needs and aspirations and those of Chemistry.

OTHER ACTIVITIES

- Assist with the management and smooth operation of equipment and instrumentation within the research group.
- Undertake other duties that may be reasonably requested and are commensurate with the nature and grade of the post.

Points To Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility

Reports to Professor Steve Christie

Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

Essential Criteria

Area	Criteria	Stage
Qualifications	Holds (or is about to obtain) a PhD in Chemistry	1
Experience and Knowledge	Experience in organic and/or inorganic synthesis is required	1
	Research experience with sufficient depth of specialist knowledge in the discipline	1,3
	Preparation of scientific reports and research publications	1,3
	Advanced knowledge of the research methods and techniques to work effectively within the research programme	1,3
	Will continually update knowledge in the field and engage in continuous professional development	3
Skills and Abilities	Excellent written and oral communication skills	1,3
	Ability to organise time, plan ahead and work independently	1
	Ability to work in a team and strong interpersonal skills	1
	Ability to deliver oral presentations, write internal research reports and produce draft publications	1,3
	Self-motivation and ability to meet fixed deadlines	1,3
Training	Ability to share responsibility for the supervision and training of post-graduate and undergraduate research students	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience in designing novel reactions and reactors	1,3
	Experience working with sensitive chemical reagents	1,3
	Experience in flow chemistry	1,3
	Experience in automation of chemical reactions	1
	Experience of online reaction analysis	1,3
	Experience in the operation/interfacing of mass spectrometers and/or ion mobility spectrometers	1,3

Conditions of Service

The position is full-time and fixed term until 14 December 2023. Salary will be on research grade 6 (£31,406 - £40,927), at a starting salary to be confirmed on offer of appointment.

The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>

In addition, the University is supportive, wherever possible, of flexible working arrangements.

We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swan/>

Applications

Closing date for applications: **26 January 2022.**