Department of Chemistry/School of Science

Loughborough University

RESEARCH ASSOCIATE – Synthetic Chemistry (Fixed Term)

Job Ref: REQ16818

Project summary:
This is a Wellcome Trust funded project to develop new fluorescent molecules for the recognition of polyphosphate anions (e.g. ATP, ADP) in order to track kinase reactions in real-time. Working with Dr Stephen Butler in the Department of Chemistry at Loughborough University, the appointee will join a team of PhD students combining expertise in organic synthesis, supramolecular chemistry and spectroscopic analysis of host-guest interactions.
The aim of the project is to synthesise new fluorescent host molecules capable of binding selectively to nucleoside polyphosphate anions in order to monitor, in real-time, the activity of enzymes that consume or generate these anions. The appointee will work in collaboration with the research group of Dr Charlotte Dodson within the Faculty of Medicine, Imperial College London. The project will involve the synthesis of a series of host molecules and examining their binding affinity and selectivity towards different biological phosphate anions. The most promising host molecules will be developed into robust, sensitive probes for monitoring the activity of kinase enzymes in real-time. The main focus of the role is the synthesis and characterisation of new anion-selective host molecules, and analysis of their ability to track enzyme reactions using fluorescence spectroscopy.

Job Description

Job Grade:

Job Purpose: This is a Wellcome Trust funded project to develop new fluorescent host molecules for the selective recognition of polyphosphate anions, in order to monitor changes in concentrations of these anions during enzymatic reactions.

Job Duties

- Carry out the synthesis and characterisation of new fluorescent host molecules
- Characterise the binding between each host molecule and different anions using a range of spectroscopic techniques, including fluorescence and NMR titration experiments.
- Develop selected compounds into sensitive probes capable of measuring changes in anion concentrations during the course of an enzymatic reaction.
- Analyse the data obtained and discuss interpretation of results.
- Contribute to the preparation and submission of research publications in leading scientific 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 conferences and at meetings with collaborators.
- Build external contacts and participate in the exchange of knowledge at conferences/networks to form relationships for future collaboration.
- Assist with the preparation of proposals and applications for funding to external bodies.
- Interact effectively with collaborators in the project
- Assist in the supervision and management of student research projects.
- May assist in the development of student research skills
- Engage in training programmes in the University (e.g. through staff development) that 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 Dr Stephen Butler, Lecturer in Chemistry.

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 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
	Advance 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 effectively independently	1,3
	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
	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	Research experience in supramolecular chemistry, specifically host-guest recognition events	1,3
	Experience in molecular modelling of host-guest interactions	1
	Experience in conducting enzymatic reactions	1
	Experience in conducting fluorescence titration experiments	1

Conditions of Service

The position is full-time and fixed term for a period of 21 months. Salary will be on Specialist and Supporting Academic grade 6 (£29,301 - £38,183per annum), 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/

Informal Enquiries

Informal enquiries should be made to Dr Stephen Butler by email at s.j.butler@lboro.ac.uk or by telephone on +44(0)1509 222577.

Applications

The closing date for receipt of applications is **18 December 2016.**