School of Science

Loughborough University

Research Associate in *Synthetic Organic Chemistry*
Design and Synthesis of Molecular Probes for Biomedical Imaging

REQ181011

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

The School of Science has extensive expertise and research activity across the field of imaging science ranging from the theoretical to the applied. A strategic decision has been taken to bring together this activity as a *centre focused on imaging science*. We have recently appointed a Director – Professor Matteo Zanda - and are currently appointing further staff at all levels to support this initiative. The centre will be the focus of considerable immediate and future investment. Imaging Science is an interdisciplinary centre crossing the boundaries of Computer Science, Mathematics, Physics and Chemistry with applications in the Medical Sciences, Life Sciences and Engineering. We are looking to recruit staff able to contribute research supporting the aims of the centre. Such research will range from discipline-specific to trans- and inter-disciplinary.

Further to previous recruitment activities, we wish to appoint an experienced postdoctoral research associate to support the Centre for Imaging Science, and specifically the new research group of Prof Zanda. *This advert is for a position in Organic Chemistry. The successful candidate will have a PhD in Organic/Medicinal Chemistry, a strong research background in Organic Synthesis/Medicinal Chemistry and research expertise or interest in: design and synthesis of molecular probes/sensors for biomedical imaging.*

Bringing together the Departments of Chemistry, Computer Science, Mathematical Sciences, Physics and the Mathematics Education Centre, Loughborough's School of Science boasts state-of-the-art facilities, an active research community and a range of options for undergraduate study, postgraduate study and research – all based on the University's expansive green campus.

The School is experiencing considerable investment and growth at this time. Its estate is being regenerated in a sustained campaign that has seen GBP 20 million spent by September 2018 on refurbishing all the buildings it occupies. The School is also a major beneficiary of the GBP 17 million STEMLab that houses state-of-the-art teaching laboratories of relevance to physics, chemistry, computer science and bio sciences. The School has invested around GBP 1 million into new teaching equipment for STEMLab and further considerable expenditure on teaching equipment is planned for the future, including for state-of-the-art computer laboratories. These facilities and our outstanding staff underpin an exceptional student experience that is reflected in our excellent NSS and national league table results.

Loughborough University is a top-10 UK higher education institution as measured by every national league table - this year we are 4th in the Guardian, 5th in the Times and Sunday Times Good University Guide, and 7th in the Complete University Guide. The Times and Sunday Times Guide has named Loughborough the University of the Year 2019. Its NSS results are also consistently amongst the best in the UK. Loughborough is also an outstanding employer, offering sector-leading conditions of service and physical infrastructure that make it a great place to work.

Project Description
Title: Design and synthesis of molecular probes/sensors for biomedical imaging.

The Post-Doctoral Research Associate (PDRA) will design, synthesise and validate new molecular probes and sensors for biomedical imaging and cell-biology, including novel targeted fluorescent tags, new systems for in vivo biorthogonal ligation and tracers for PET Imaging, in collaboration with biomedical partner groups in UK and Europe. The PDRA will support Professor Matteo Zanda with the supervision of post-graduate students and will contribute to the day-to-day management of the research group.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose
To conduct research and undertake primary data collection in the area of design and synthesis of molecular probes/sensors for biomedical imaging. To be responsible for the day-to-day management of the research group and lab of Professor Matteo Zanda and to support with the supervision of post-graduate students.

Job Duties
- To become familiar with the area of molecular imaging probe design and synthesis, and acquire an in-depth knowledge of the state-of-the-art on the topic
- To conduct research on the design and synthesis of molecular probes/sensors for biomedical imaging
- To implement the research programme above, collate and evaluate experimental data, apply specialist knowledge, formulate detailed plans and advise on the progress of the project
- Be responsible for conducting the day to day running of the project
- To formulate detailed plans for the project based on broad guidance from the project team
- To feed back to the project team on progress, to make recommendations for next steps
- Write up regular progress reports and present outcomes to all Investigators and Collaborators
- Travel to attend meetings and make presentations both within the project partners working group and to external stakeholders
- To support the project team by enhancing relationships with existing collaborators and by assisting the establishment of relationships with new collaborators
- To write research papers suitable for publication in high quality academic journals
- To attend and contribute to conferences
- To contribute to project promotion and public engagement events
- Contribute ideas for new research and enterprise directions
- Maintain confidentiality at all times and ensure that intellectual property (IPR) agreements are not violated
- To assist the academic staff in the project team with the supervision of undergraduate MSc and PhD project work and day-today supervision and support of other researchers
- Where appropriate, to deliver teaching, tutorial and laboratory sessions to students
- Engage in training programmes in the University (or elsewhere) that are consistent with the needs and aspirations of the project and those of the Department
- Undertake other duties as may be reasonably requested and that 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 the Director of the Centre for Imaging Science.

Person Specification

Your application will be reviewed with respect to meeting the essential and desirable criteria listed below. 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
Experience	Background in Organic/Medicinal Chemistry	1
	Experience in advanced organic synthesis	1
	Experience in design and synthesis of complex organic molecules	1
	Authoring original work for high quality academic journal papers, conference papers or technical reports	1
	Experience at post-doctoral level of working in a high quality academic research environment	1
Skills and abilities	Design and synthesis of complex organic molecules using state-of-the-art synthetic, analytical and spectroscopic methods	1,2,3
	Ability to contribute to develop an original research programme on your own initiative and to persuade others of its importance	2,3
	Excellent written and oral communication skills	1,2,3
	Self-motivated with ability to meet deadlines	2,3
	Excellent interpersonal, and organisational skills	2,3
	Excellent working knowledge of analytical/spectroscopic methods such as NMR, MS, HPLC, LC-MS	1,2,3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,2,3
	Knowledge of relevant Health & Safety issues	2,3
Training	Demonstrate evidence of having undertaken further training	1,3
Qualifications	PhD in Organic/Medicinal Chemistry	1
Other	Commitment to observing the University's Equal Opportunities policy at all times	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience in molecular imaging	1
	Experience in peptide synthesis	1
	Developing proposals for funding from external agencies	1,3
	Working in a high quality academic research environment	1,2,3
	Experience of teaching and / or supervision of students in relevant areas	1
Skills and abilities	Authoring original work, in the highest quality refereed academic journals	1
	A strong publication track record	1

	Ability to write grant/fellowship applications	1,2,3
Other	Travel / Able to travel Independently / Working patterns	3

Conditions of Service

The position is full-time and fixed-term for 2 years. Salary will be on Specialist and Supporting Academic Grade 6, (£30,395 – £39,609 per annum), subject to an annual pay award, 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 Grade 6 and above 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/