

Research Associate in Sustainable Polymer Chemistry

Job Ref: **REQ230541**

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Project Description

We invite applications for a post-doctoral research associate (PDRA) position in Sustainable Polymer Chemistry to work with Dr Fiona Hatton in the Department of Materials at Loughborough University. The post is available for up to 24 months, with a start date of October 2023, and is part of the "Bio-based self-assembled polymers from renewable resources" project, funded by the EPSRC. Information about the project can be found on 'Grants on the Web' - [Bio-based self-assembled polymers from renewable resources \(ukri.org\)](https://ukri.org/bio-based-self-assembled-polymers-from-renewable-resources).

The project's focus is to prepare new polymers from renewable resources, with tuneable properties, which can be used in a range of applications including biomedical (i.e., drug delivery), paints, adhesives, and personal care products. This includes chain-end modification of naturally occurring polymers to synthesize bio-based block copolymers and investigate their self-assembly in aqueous systems. Monomers from renewable resources will also be synthesized and polymerized. Working with project partner Cargill, this project will deliver novel copolymers from renewable resources, with industrial relevance.

We are looking for an ambitious Postdoctoral Research Associate to contribute to the development of new and interesting polymers with interests in green chemistry and/or sustainability in the chemical sciences. The successful candidate will be able to demonstrate expertise in polymer synthesis and characterization, while experience of working with naturally occurring polymers or renewable resources is desirable. See the attached person specification for more details.

Informal enquiries should be made to Dr Fiona Hatton, Lecturer in Polymer Chemistry by email at f.hatton@lboro.ac.uk.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose

The Postdoctoral Research Associate will be responsible for conducting research in polymer chemistry to prepare new bio-based copolymers, study their self-assembly in water and evaluate their relevance for selected applications.

Job Duties

- To undertake chemical syntheses such as chain-end modification of naturally occurring biopolymers and synthesis of acrylic-based monomers from renewable resources.
- To synthesise copolymers by reversible deactivation radical polymerisation (RDRP) techniques.
- To analyse copolymers using typical polymer characterisation techniques.
- To investigate copolymer self-assembly using a variety of relevant techniques.

- To evaluate the performance of these bio-based copolymers for selected applications.
- To attend meetings and make presentations with the industrial project partner, polymer research group and externally where appropriate.
- To write research papers suitable for publication in high quality academic journals.
- To attend and contribute to conferences (in person or online).
- 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 with the supervision of undergraduate MSc and PhD project work and day-to-day 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 Dr Fiona Hatton, Department of Materials.

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 knowledge in Polymer Science or Polymer Chemistry with an interest in sustainability	1, 2, 3
	Working collaboratively within a team	1, 2, 3
	Authoring original work for academic journal papers, conference papers or technical reports	1
Skills and abilities	Chemical and polymer synthesis techniques	1, 3
	Good working knowledge of typical chemical characterisation techniques (e.g. spectroscopic methods)	1, 3
	Experience with polymer characterisation techniques	1, 3
	Excellent written and oral communication skills	2, 3
	Self-motivated with ability to meet deadlines	3
	Excellent interpersonal, and organisational skills	2, 3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1
	Knowledge of relevant Health & Safety issues	3
Training	Demonstrate evidence of having undertaken further training	1
Qualifications	PhD (or near completion) in Polymer Chemistry or closely related field	1
Other	Commitment to observing the University's Equal Opportunities policy at all times.	1, 3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience of polymer chain-end modification	1, 2, 3
	Experience with reversible deactivation radical polymerisation (RDRP) techniques	1, 2, 3
	Experience studying polymer self-assembly	1, 2, 3
	Experience working with external stakeholders to deliver a project	1, 3
	Developing proposals for funding from external agencies	1
	Working in a high-quality academic research environment	1
	Experience of teaching and/or supervision of students in relevant areas	1, 3
Skills and abilities	Experience with a wide range of polymer characterisation techniques, e.g. NMR, GPC, DLS, EM	1

	Authoring original work, in the highest quality refereed academic journals	1
	A strong publication track record	1

Conditions of Service

The position is full time and fixed term for up to 24 months. Salary will be on Specialist and Supporting Academic Grade 6, £33,348 - £43,155 per annum, at a starting salary to be confirmed on offer of appointment. The appointment will be subject to the University's Terms and Conditions of Employment for staff grades 6 and above, 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 can be found [here](#).

The University offers a wide range of employee benefits which can be found [here](#).

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

The closing date for receipt of applications is 12 June 2023