School of Aeronautical, Automotive, Chemical and Materials Engineering

Loughborough University

Research Associate in Polymers and Colloids

Job Ref: REQ240254

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.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 to work with Dr Ignacio Martin-Fabiani in the Department of Materials at Loughborough University. The post is available for up to 15 months, and is part of the "A bioinspired platform technology for next-generation functional paints and coatings" project, funded by UK Research and Innovation. Information about the project can be found on this link.

This project aims to harness cutting edge particle and polymer self-assembly methods to produce the next generation of paints and coatings. It will involve the characterization and understanding of the behaviour before and during drying of colloidal dispersions at the nano and microscale combining fluorescence correlation spectroscopy, atomic force microscopy, rheology, and other characterization techniques. There will be a strong component of both on experimental set-up design and advanced data analysis. The resulting insights will be used down the line to develop formulations for functional paints and coatings, such as antibacterial and abrasion resistant, in collaboration with industrial partners from the project consortium. The project will require close collaboration with and potential visits to academic and industrial partners in the UK, France, and Spain.

Informal enquiries should be made to Dr Ignacio Martin-Fabiani, Senior Lecturer and UKRI Future Leaders Fellow by email at i.martin-fabiani@lboro.ac.uk.

Start date is 01/08/2024, although we might consider an earlier start for the selected candidate. We reserve the right to close this vacancy early if we receive sufficient applications for the role.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose

To undertake research as part of the UKRI Future Leaders Fellowship program and work with academics, researchers, and industrialists across the consortium to deliver the programme aims and objectives.

Job Duties

- To become fully knowledgeable in the field of colloidal polymers and nanocomposites via independent study.
- To collaborate with academic and industrial partners, including short-term visits.
- To design and execute experiments drawing upon models in the scientific literature.
- To use techniques of atomic force microscopy, fluorescence lifetime imaging and correlation spectroscopy, confocal fluorescence microscopy, rheology, and others.

- To develop and implement novel experimental setups that offer the potential to optimize the insights resulting from the project.
- To undertake advanced data analysis to enable understanding of the physical processes associated with particle and polymer self-assembly.
- To manage technical equipment and provide training to other users as required.
- To write periodic reports and journal articles for publication on research outcomes from the project and make presentations at appropriate workshops, meetings, conferences, etc.
- To present research results at periodic teleconferences and meetings with project partners
- To assist in the training and supervision of more junior researchers and research students within the group
- To perform risk assessments, method statements and implement safety procedures.
- To maintain confidentiality when appropiate and ensure that intellectual property agreements are not violated
- To undertake such other duties as may reasonable be 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 Ignacio Martin-Fabiani, 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	Recent relevant research in an academic environment	1, 2, 3
	Experience in one or more of the following: atomic force microscopy, confocal fluorescence microscopy, fluorescence correlation spectroscopy	1, 2, 3
	An interest in the development of polymer and composite materials for liquid formulations in combination with creativity and ingenuity when approaching research	1,2, 3
	Evidence of writing academic papers	1,2, 3
	Experience of independent project planning and management	1,2, 3
	Knowledge of polymer and/or colloid science	1,2, 3
Skills and abilities	Ability to coordinate project activities, manage project tasks, prioritise and meet deadlines	1,2, 3
	Ability to work independently and also as part of a team	1,2, 3
	Experience with polymer characterisation techniques	1,2, 3
	Excellent written and oral communication skills	1,2, 3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,2, 3
	Excellent interpersonal, and organisational skills	1,2, 3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,2, 3
	Skills in finding information in the scientific literature and proposing original ideas	1,2, 3
	Use of code-based advanced scientific analysis data software (e.g., Matlab, Python)	1,2, 3
Training	A willingness to undertake further training as appropriate and to adopt new procedures as and when required	1,2, 3
Qualifications	A PhD qualification (or near completion) in a relevant subject area	1
Other	Commitment to observing the University's Equal Opportunities policy at all times.	1
	Willingness to travel and do short-term visits to project partners	1,2, 3
	Commitment to maintain confidentiality when appropiate	1,2, 3

Desirable Criteria

Area	Criteria	Stage

Experience	Experience in supervising junior members (e.g. PhD or final year project students)	1, 2, 3
	Experience being responsible for and managing technical equipment	1, 2, 3
	Knowledge of the principles of colloids, polymers, and interfacial science	1, 2, 3
	Experience in fluorescence correlation spectroscopy (or lifetime imaging) measurements and analysis	1, 2, 3
	Experience in small-angle scattering	1,2, 3
	Experience in instrumentation development	1,2, 3
Skills and abilities	Computational model building and refinement	1,2, 3

Conditions of Service

The position is full time and fixed term for up to 15 months. Salary will be on Specialist and Supporting Academic Grade 6, spinal point 27-29, up to 36,024 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 23 April 2024**.** We reserve the right to close this vacancy early if we receive sufficient applications for the role.