

Research Associate in Machine Vision and Marking for Reusable Packaging

Job Ref: REQ250570

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Wolfson School of Mechanical, Electrical and Manufacturing Engineering

Project Description

Applications are invited for a post-doctoral research associate (PDRA) to join a Loughborough IP and Commercialisation Accelerator enterprise project. The project focuses on developing novel marking and tracking technologies for reusable plastic packaging within a circular economy framework and is part of a collaborative effort involving the Departments of Manufacturing Engineering, Design, and Materials Engineering.

Building on our previous *Perpetual Plastics for Food-to-Go* project [grant number NE/V01076X/1], which undertook several feasibility studies for contaminant-free marking methods for plastic packaging, this research aims to advance a technique that enables rapid, machine-readable identification for asset management as well as other areas of application to be explored. The successful candidate will be responsible for the practical development and demonstration of this technology in industrial contexts.

This position is ideally suited to candidates with expertise in one or more of the following areas: optical processing, machine vision and image processing, polymer science, packaging design and manufacturing, or related engineering disciplines. A willingness to travel and engage with industry partners is essential.

Objectives for the PDRA:

- Develop and optimize a machine-readable marking method for reusable plastic packaging using contaminant-free techniques compatible with industrial polymer processing methods.
- Build on existing knowledge and internal market research with help from the Research & Innovation Office to identify potential partners and licensing opportunities.
- To secure and leverage industrial and commercialization support under NDAs, including production of high-quality data/fact sheets for distribution.
- Consolidate the University's IP position with a patent attorney toward a UK patent filing to cover the method and system of the novel technology.

This is a 12-month full-time position to commence on or before 01/10/2025.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose

To conduct research in the area of polymer marking and machine vision for reusable plastic packaging systems and to work to identify, attract and engage with relevant industrial companies who may be interested in the new capability. Also, to support the development of the case and application for intellectual property protection to ensure the commercial advantage for the university. The post is a fixed term contract of 12 months. The Research Associate will be responsible for managing the experimental aspects of the project, conduct and coordinate enterprise activities related to marketing, and a significant proportion of the time will be devoted to interaction with industry.

Job Duties

- Be responsible for conducting the day to day running of the project.
- To formulate detailed plans for the project based on 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
- To attend, contribute and present at regular meetings with the IP Commercialisation team.
- Travel to industry partners
- To contribute to project promotion, business and public engagement events.
- Identify and involve relevant stakeholders that will benefit from the project results.
- Devise a dissemination and communication strategy.
- Contribute ideas for new research and enterprise directions.
- To assist the academic staff in the project team with the supervision of undergraduate MSc and PhD project work and day-to-day supervision and support of other researchers.
- Where appropriate, to support or deliver teaching, tutorial and laboratory sessions to students
- Engage in training programmes in the University, which are consistent with your needs and aspirations and those of the project team.
- 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 Equity, Diversity & Inclusion policy and procedures at all times. Duties must be carried out in accordance with relevant Equity, Diversity & Inclusion legislation and University policies/procedures.

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

Organisational Responsibility

Reports to the Dr Elliot Woolley, Reader in Sustainable Production and Consumption.

Person Specification

Your application will be reviewed with respect to meeting 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	Current or recent relevant work experience in an academic or industrial environment	1,3
	Authoring original work for academic journal papers, conference papers, technical reports or patent applications	1
	Relevant experience of design and execution of experimental procedures	1,3
	Experience in one or more of the following: optical processing, machine vision and image processing, polymer science, packaging design and manufacturing, or related engineering disciplines.	1,3
Skills and abilities	Excellent written and oral communication skills	1,3
	Highly motivated with the ability to set and meet deadlines appropriate to the progress of the project	3
	Excellent interpersonal, and organisational skills	1,3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1
	Knowledge of relevant Health & Safety issues	3
Training	Willingness to undertake appropriate further training and to adopt new procedures as and when required	1,3
Qualifications	PhD or near completion	1
Other	Commitment to observing the University's Equal Opportunities policy at all times	1,3
	Willingness to Travel	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Drafting of materials for Patent applications	1,3
	Experience of working in or collaborating closely with industry	1,3
	Knowledge of the plastic packaging industry	1
	Image capture and processing	1
	Development of business opportunities	1
Skills and abilities	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 12 months. Salary will be on SPECIALIST AND SUPPORTING ACADEMIC GRADE 6, SALARY BAND (£35,116 - £38,249) 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 equity 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/>