Department/School of AACME

Research Associate in *(Bio)Chemical Engineering*
Algae-based carbon capture and utilisation scale-up

Project Title

Job Ref: REQ250415

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

School/Department summary can be inserted here, if desired.

Project Description

This 18-month position is part of a collaborative project with Sokoine University of Agriculture (Tanzania) and University of Pretoria (South Africa) to develop a low-cost, algae-based wastewater treatment system for livestock wastes from rural Tanzanian communities.

Our project will focus on the production and isolation of algae-based pigments and other by-products to generate new income streams to help offset the costs of wastewater treatment and support Tanzania's fledging textile industry. You will be responsible for screening and selecting pigment-producing algae strains for cultivation under non-sterile conditions. Extracted pigments will be tested for dyeing of cotton fibres under different conditions. The post is based in the Department of Chemical Engineering (School of Aeronautical, Automotive, Chemical and Materials Engineering) and the Water Engineering Group (Architecture, Building and Civil Engineering) at Loughborough University.

You will be expected to both co-host and visit project partners in Tanzania and South Africa (including an extended research visit) to exchange knowledge and expertise throughout the project.

We are committed to achieving equality for all those who learn and work here and providing a diverse and inclusive working environment. We will consider reasonable adjustments commensurate with the project requirements.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose [suggested wording to be tailored to specific role to provide a brief concise overview of the purpose of the role]

To identify, screen and select suitable algae strains for non-sterile wastewater treatment and pigment production. To develop low-cost pigment extraction and textile dyeing protocols that can be adapted by rural communities. To train and exchange knowledge with researchers at African partner institutions.

Job Duties [suggested wording to include a breakdown of <u>at least</u> 3 project specific requirements of the role]

- *To identify, screen and select pigment-rich algae strains for cultivation on non-sterile wastewaters.*
- *To develop suitable protocols for pigment analysis, extraction and fixation.*
- *To collaborate with project partners, including short and medium-term visits, and coordinate activities across the consortium*
- *To perform risk assessments and adhere to all relevant safety procedures.*
- *To supervise and support related researchers and project students*

[Applicable to all positions – Delete as Appropriate]

- 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 write research papers suitable for publication in high quality academic journals.
- To attend and contribute to conferences.
- 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 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, Health & Safety, etc.

Organisational Responsibility

Reports to Dr Jonathan Wagner, Reader in Circular Economy Engineering.

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 Chemical Engineering, Chemistry, Biotechnology, or other relevant technical discipline]	1
	Experience in algae cultivation, including aseptic techniques	1,2,3
	Experience of developing and delivering independent research plan with minimum guidance	1,2,3
	Authoring original work for academic journal papers, conference papers or technical reports	1,2,3
Skills and abilities	Ability to work across multiple fields and readily understand new and challenging concepts	1,2,3
	Ability to complete basic chemical engineering calculations including mass and energy balances, equipment sizing and separation processes	1,3
	Excellent written and oral communication skills	1,2,3
	Self-motivated with ability to meet deadlines	1,3
	Excellent interpersonal, and organisational skills	1,3
	Working knowledge of software packages [Excel, Word, PowerPoint]	1,3
	Working knowledge of specific analytical methods relevant to project, such as GC, HPLC, TOC/TON, biochemical analysis, Raman, UV-vis, FTIR, ICP	1,3
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,3
	Knowledge of relevant Health & Safety issues	1,3
Training	A willingness to undertake further training as appropriate and to adopt new procedures as and when required	1,3
Qualifications	PhD (or near completion) in Chemical Engineering, Chemistry, Biotechnology or other relevant subject	1
Other	Commitment to observing the University's Equal Opportunities policy at all times.	3
	Willingness to travel and do medium-term visits to project partners	3
	Willingness to adapt flexible working hours where required, such as weekend sampling of algae cultures	3

Desirable Criteria

Area	Criteria	Stage
Experience	Developing proposals for funding from external agencies	1
	Experience of teaching and / or supervision of students in relevant areas	1,3
Skills and abilities	A strong publication track record	1
	Experience in biomass fractionation and the extraction and purification of biomolecules	1,3
Qualifications		
Other		

Conditions of Service

The position is FULL Time and FIXED TERM. Salary will be on Specialist and Supporting Academic Research, Grade 6, Salary Band £35,116 - £45,413 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 June 2025**