# Job Description

## Job title: Research Fellow in Textile Biotechnology

**Faculty of Technology, Arts and Culture, School of Design Innovation**

**Grade: F** **Role profile: Research Fellow**

**Full time, 2 Year Fixed-Term Contract (until 31st January 2028)**

| | Duties of the role |
|---|---|
| **Overall purpose of the role** | To undertake research and development according to the requirements of the BBSRC funded project on the development of enzyme-based biotechnology and scaling-up bioprocesses to recover valuable resources from mixed textile waste for recycling and reuse to support textile sectors transition towards circularity.<br><br>Based on the successful outcomes from the previous BBSRC funded project on the recycling and reuse of wool blended fabric waste, the researcher will establish an enzymatic process system at pilot scale for the recovery of fibres and dyes from waste wool-based textile materials, and their remanufacturing and reuse for achieving textile circularity.<br><br>The work is part of a collaborative project. The ability to work with other people, sharing tasks as required, is essential. |
| **Main duties and responsibilities** | Carrying out research work proposed in the work packages of BBSRC funded project which will be involved in the design of a prototype bioreactor and optimising the enzyme bioprocess for scaling-up the separation of different fibre components from waste wool blended fabrics and recovery of dyes, remanufacturing and reuse of the recovered fibres and dyes to produce new textile materials and products.<br><br>Liaising with research colleagues.<br><br>Making internal and external contacts to source materials for project work and develop knowledge and understanding.<br><br>Understanding the enzymatic degradation of wool fibres and using analytical equipment to characterise wool polypeptides and recovered dyes for their commercial applications.<br><br>Working with industry to produce recycled or renewed textile fibres/fabric and dyes within the UK.<br><br>Assessing environmental impact and economic benefit of the pilot bioprocesses, recycled dyes and fibres.<br><br>Recording work, writing and presenting reports at meetings and contributing to |

| | Duties of the role |
|---|---|
| | publications.<br><br>Supporting management of the project.<br><br>Other duties may be required according to the needs within the School.<br><br>• Promote and exhibit DMU values and be a role model for the university's code of conduct.<br><br>• Perform any other duties commensurate with the job grade as reasonably required from time to time.<br><br>• Treat all DMU staff, students, contractors and visitors with dignity and respect. Provide a service that complies with the Equality Act 2010, eliminating unlawful discrimination, advancing equality of opportunity and fostering good relations with particular attention to the protected characteristics of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief (or none), sex and sexual orientation.<br><br>• All members of staff are responsible for their contribution to improved environmental performance and in reducing greenhouse gas emissions at DMU. It is therefore required that all members of staff are aware of how the Environmental Policy relates to their own role at the University. Staff conduct must reflect the values inherent in the Environmental Policy and where required staff must cooperate with Environmental Policy and where required staff must cooperate with environmental compliance and conformance requirements to help minimise our emissions to air, water and land. |

DE MONTFORT UNIVERSITY LEICESTER

# Person Specification

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| Area of responsibility | Requirements | Essential or desirable | | *Method of assessment | | | |
|---|---|---|---|---|---|---|---|
| | | | | A | I | T | D |
| **Qualifications & Training** | An honours Degree in Textile Technology, Chemistry, chemical Engineering or Biological Science or other appropriate scientific discipline | Essential | | | | | X |
| | Postgraduate qualification in a related area | Essential | | | | | X |
| | PhD degree in a related area | | Desirable | | | | X |
| **Previous Work Experience** | Experience of completing research and development tasks | Essential | | X | | | |
| | Significant research and development experience in an industrial or academic environment | Essential | | X | | | |
| | Experience of using analytical equipment for fibre and dye characterisation | | Desirable | | X | | |
| **Specific Knowledge, Skills, Motivation and Abilities Required** | Knowledge of natural and synthetic fibres, especially for wool protein fibres | Essential | | X | X | | |
| | Knowledge of enzymes and enzyme catalysis. | | Desirable | | X | | |
| | Experience of basic statistical methods of data analysis. | Essential | | | X | | |
| | Inventiveness and interest in resolving non-standard problems, carrying out research. | | Desirable | X | | | |

| Area of responsibility | Requirements | Essential or desirable | | *Method of assessment | | | |
|---|---|---|---|---|---|---|---|
| | | | | A | I | T | D |
| | Excellent observational skills. | Essential | | X | | | |
| | Knowledge and understanding of textile wet processing and evaluation methodology | | Desirable | X | X | | |
| | Ability to carry out complex tasks reliably and accurately without constant supervision. | Essential | | X | | | |
| | Self-motivated and able to respond quickly under pressure. | Essential | | X | | | |
| | A proven ability to work to deadlines. | Essential | | X | X | | |
| | Good communication, IT and report writing skills. | Essential | | | X | | |
| | Excellent interpersonal team-working skills. | Essential | | X | X | | |

***A = Application Form; I = Interview; T = Test; D = Documentary Evidence**