

Research Associate Metal additive manufacturing

Job Ref: REQ260683

School/Department summary:

The Department of Materials, within the School of Aeronautical, Automotive, Chemical and Materials Engineering (AACME) at Loughborough University, offers a vibrant and multidisciplinary environment for research and innovation in materials science and engineering. The Department brings together expertise across advanced materials processing, additive manufacturing and materials characterisation, supported by excellent research infrastructure and facilities, including the Loughborough Materials Characterisation Centre (LMCC). Researchers benefit from a collaborative environment, access to advanced experimental capabilities, and opportunities to work across disciplines and with academic and industrial partners.

Project Description:

This is 18 month (minimum) research project funded by Aerospace Technology Institute/Innovate-UK focused on additive manufacturing of metal alloys. The project aims to establish fundamental process-structure-property relationships by investigating how processing conditions influence microstructural evolution and material performance, supporting the development of high-performance components. The Research Associate will join the Advanced Materials Processing Laboratory (AMPLab) within the Department of Materials and work closely with the project investigators, researchers, technical staff and project partners to deliver the experimental research programme and achieve the project objectives.

Job Description

Job Family and Grade: Specialist and Supporting Academic Grade 6

Job Purpose

To conduct research in metal additive manufacturing, investigating the influence of laser processing parameters on microstructural evolution and material performance. The postholder will undertake experimental research and materials characterisation to establish process-structure-property relationships and support the development of high-performance components.

Job Duties

- Support the design and manufacture of experimental samples and components, including the development and optimisation of additive manufacturing processing conditions.
- Undertake metal powder feedstock characterisation, including particle size analysis, powder flowability and SEM.
- Conduct metallographic preparation of the manufactured samples.
- Perform microstructural characterisation using XRD, optical microscopy, SEM and EBSD.
- Conduct mechanical testing to evaluate the properties and performance of manufactured materials.

- Analyse and interpret experimental results and prepare technical reports.
- Work collaboratively with the research team and project partners to support the successful delivery of project objectives and milestones.
- To write research papers suitable for publication in high quality academic journals.
- Travel to attend meetings and make presentations both within the project partners working group and to external stakeholders.
- Present the work in international conferences.

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 outlined in the document.

Organisational Responsibility

Reports to the: Prof. Moataz Attallah.

Person Specification

Your application will be assessed based on the essential and desirable criteria listed below.

Applicants are strongly encouraged to explicitly demonstrate how they meet each essential (and desirable) criteria at the application stage. The criteria that you need to demonstrate in your application will be listed as Stage 1 in the table below.

Stages of assessment are as follows:

- 1 – Criteria measured at Application
- 2 – Criteria measured at Test/Assessment Centre/Presentation
- 3 - Criteria measured at Interview

Essential Criteria:

Area	Criteria	Stage
Experience	Background and practical experience in metal additive manufacturing.	1,2,3
	Experience in microstructural characterization (SEM, optical microscopy and EBSD).	1,2,3
	Authorising original work for academic journal papers, conference papers or technical reports	1
	Knowledge in Titanium alloys.	1,2,3
	Practical experience in mechanical testing	2,3
Skills and abilities	Experience in metal additive manufacturing.	1,3
	Practical experience in microstructural characterization (SEM, optical microscopy and EBSD).	2,3
	Practical experience in mechanical testing, data analysis with understanding of the fracture surfaces.	2, 3
	Good written and oral communication skills	3
Qualifications	PhD degree in material science or metallurgy, mechanical engineering or similar discipline	1
Other	Demonstrate an ability to behave in a way that adheres to equitable and inclusive working practices, while respecting diversity of thought and supporting freedom of speech and expression.	1,3

Desirable Criteria:

Area	Criteria	Stage
Experience	Further project specific experience in metal additive manufacturing.	1,3
	Developing proposals for funding from external agencies	1,3
	Working in a high-quality academic research environment	1,3
	Experience of teaching and / or supervision of students in relevant areas	1,3
Skills and abilities	Authoring original work, in the highest quality refereed academic journals	1
	A strong publication track record.	1

Conditions of Service

The appointment will be subject to the [University's Terms and Conditions of Employment](#) relevant to the job grade.

Shared University Responsibilities

As a member of the Loughborough community, you are expected to:

- Take reasonable care of yourself, others and the environment, and to prevent harm by your acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Sustainability Policies & Procedures.
- Support and contribute to the University's commitment to Equity, Diversity, and Inclusion (EDI), while carrying out all duties in a way that respects these principles and upholds the right to free expression. Further information about EDI at Loughborough and our strategic aims is available on our website

Our Purpose, Vision, and Values

Our purpose, Vision and Values underpin all that we do and shape how we work together at Loughborough.

We're proud to promote our values: **Adventurous, Collaborative, Creative, Authentic** and **Responsible**. Our people bring these values to life every day, and they are central to the positive and supportive culture that makes Loughborough unique.

If you join us, you'll be encouraged to bring these values to life in your own work and contribute to the positive, supportive culture that makes Loughborough unique.

Read more about our [vision and values](#).

Our Accreditations



We 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.



We are proud to be a [Race Equality Charter Member](#). The Charter aims to improve the representation, progression and success of all minority ethnic staff and students within higher education and address issues of racism within higher education institutions (HEIs).



We are proud to be a Disability Confident Employer and have adopted a proactive approach to employing disabled people and to creating a more diverse workforce. We ensure that our recruitment processes are inclusive and accessible. We guarantee to offer an interview to all applicants who have declared themselves with a disability, provided they meet the essential criteria for a role. We proactively anticipate and provide reasonable adjustments and support existing employees who acquire a disability or long-term condition to thrive in the workplace.



We are a real living wage employer, and our Living Wage Employer Mark shows our commitment to paying our staff according to the cost of living.



We are proud supporters of the [City of Sanctuary movement](#) and delighted to be recognised as a University of Sanctuary. This national network brings together, university staff, lecturers, academics and students, who together work to make Higher Education institutions place of safety, solidarity and empowerment for people seeking sanctuary.

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.