



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Manufacturing Processes, Faculty of Engineering



Salary: Grade 7 (£33,199– £39,609 p.a.)

Reference: ENGME1204

Closing date: 14 July 2019

Fixed-term for 2 years

We will consider flexible working arrangements

Research Fellow in Manufacturing Processes

School of Mechanical Engineering

Are you an experienced and ambitious researcher looking for your next challenge? Are you interested in manufacturing processes? Do you want to further your career in one of the UK's leading research intensive Universities?

The [Future Manufacturing Processes Research Group](#) explore how novel methods of manufacturing can provide new capabilities in products and services across a wide range of applications. The group have a large portfolio of externally funded research projects, in addition to significant flexible funding for long-term strategic research initiatives. The group have recently been recognised, by extensive external peer review, to be World Leading.

This role is part of an EPSRC funded project to enable greater understanding of osteoarthritis in the hip. In this project we will be investigating how manufacturing processes can act as an enabler to this greater understanding by fabricating synthetic phantoms and providing embedded intelligence through the incorporation of sensory devices. Consequently there are two different phases of work within this research position: 1) investigating fabrication methods that allow the production of case-specific phantoms of the hip anatomy with selected elements of fidelity, 2) investigating fabrication methods for components with embedded sensing capability that can be utilised in experimental biomechanical simulations.

You will explore different materials and manufacturing processes to provide this. This will include: materials testing, designing jigs and fixtures where appropriate, refinement of some process apparatus for the required material compatibility, and determining scales and accuracy within these fabrication methods. This will require the design and engineering of new or adapted components, systems and hardware to enable effective manufacture. It will then involve conducting experimentation with the manufacturing process to fabricate the required components which will then be evaluated by biomechanical testing colleagues.

This research will be undertaken within the Future Manufacturing Processes research group who have extensive experience of designing conducting manufacturing research with unique digitally-driven machinery. You will be integrated into our wider research team and benefit from specialist technical support. The experimental work will be conducted in our new state-of-the-art research laboratory.



Holding a PhD in engineering or a closely allied discipline, you will have a strong background in the development and use of manufacturing apparatus and instrumentation to fabricate specialist devices. You will also have an enthusiastic, creative approach to your research and thrive on working with a team.

What does the role entail?

As a Research Fellow, your main duties will include:

- Conducting research into the development and operation of the manufacturing process, and conducting technical research on materials, components and other parts as necessary;
- Design and engineering of new or adapted components, systems and hardware to enable the fabrication of the envisaged simulation components;
- Study and benchmark elements including material compatibility, compositional changes, and scales and accuracy of the resultant components;
- Benchmarking alternative manufacturing processes as well as likely future technology developments;
- Developing research objectives and proposals and contributing to setting the direction of the research in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Communicating or presenting research results through publication or other recognised forms of output;
- Preparing papers for publication in leading international journals and independently writing reports;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and aiding other colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.



What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or very close to completion) in engineering or a closely allied discipline;
- A strong background, and evidence of, the use of manufacturing apparatus and instrumentation;
- A strong background, and evidence of, prior work in creating bespoke and sometimes complex devices;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- Excellent written and verbal communication skills including presentation skills;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- A proven ability to work well both individually and in a team;
- A commitment to your own continuous professional development.

You may also have:

- A proven track record of peer-reviewed publications in high impact factor journals;

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Professor Russell Harris](#), Future Manufacturing Processes Research Group

Tel: +44 (0)113 343 2155

Email: r.harris@leeds.ac.uk



Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering](#) and the [School of Mechanical Engineering](#).

A diverse workforce

The Faculty of Engineering is proud to have been awarded the [Athena Swan Silver Award](#) from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Working at Leeds

Find out more about the benefits of working at the University and what it's like to live and work in the Leeds area on our [Working at Leeds](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page

