UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Laser Processing of Biomaterials and Hard Ceramics, Faculty of Engineering and Physical Sciences

Salary: Grade 7 (£35,333 - £42,155 p.a.) Due to finding restrictions, an appointment will not be made higher than £37,474 p.a.

Reference: EPSPE1082

Closing date: Sunday 05 February 2023

Fixed-term for 9 months

We are open to discussing flexible working arrangements

Research Fellow in Laser Processing of Biomaterials and Hard Ceramics,
School of Chemical and Process Engineering.

Do you have a background and experience in biomaterials, laser machining and processing bone scaffolds? Can you demonstrate your expertise in these areas? Do you want to develop your career in an active group at one of the UK's leading research-intensive universities?

We are seeking to appoint a talented and highly motivated Research Fellow to work independently in the areas of laser machining and processing of bone scaffolds as biomaterials and hard ceramics for tribological applications. The laser processing of bone scaffold is required to enhance the osteogenic activity for improving and promoting healthy bone formation.

With a strong background in characterisation techniques and bio-materials, you will hold a PhD (or will have submitted your thesis before taking up the role) in Chemical, Mechanical or Materials Engineering or a directly relevant area of transport processes in cellular/tissue environment.

What does the role entail?

As a Research Fellow, your main duties will include:

- Laser machining of prefabricated and finished scaffolds, for enhancing cellular activities, by increasing the surface area using laser drilling or grooving; characterisation of the increase in surface area for comparing the osteogenic activities with the scaffold without laser processing;
- Standardisation of the materials and scaffold engineering process using the statistical analysis of the properties characterised;
- Implementing method(s) for demonstrating the interrelationship between the increase in the pore surface and mechanical properties under compressive load will be characterised for stress analysis model using the finite element technique;
- Demonstrating the skills in materials characterisation including X-ray powder diffraction, surface area analysis, pore diffusion modelling and scanning electron microscopy for average size distribution of pores/grooves;

- Supporting the complementary work on cell culture, toxicology and histological studies for exploring the regenerative potential of the laser processed material; toxicology tests and potential risks investigation;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding 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;
- Supporting research of the team by maintaining effective communication and research management tools;
- Leading and supporting high-standards of dissemination activities in peer-reviewed journals and conference proceedings;
- 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 acting as a mentor to less experienced 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?

- A PhD (or have submitted your thesis before taking up the role) in Chemical, Mechanical or Materials Engineering or a directly relevant area of transport processes in cellular/tissue environment;
- Demonstrable knowledge in the field of chemical engineering, laser processing of materials, micro-fluidics, and energy transport;
- A strong background in characterisation techniques and bio-materials;
- Excellent time management and planning skills; with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- A proven track record of peer-reviewed publications in high impact journals;

- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research.

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 Animesh Jha,
Tel: +44 (0)113 343 2342
Email: A.Jha@leeds.ac.uk

Additional information

Faculty and School Information
Further information is available on the research and teaching activities of the Faculty of Engineering & Physical Sciences, and the School of Chemical and Process Engineering.

A diverse workforce
As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are 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

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our Working at Leeds information page.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at hr@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.