



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Hard-Soft Tissue Restoration using Lasers, Faculty of Engineering.



Salary: Grade 7 (£31,199 - £39,609 p.a)

Reference: ENGPE1164

Closing date: 01 July 2019

Fixed-term for up to 1 year, available from 1 August 2019, to end by 31 July 2020

We will consider flexible working arrangements

Research Fellow in Hard-Soft Tissue Restoration using Lasers, School of Chemical and Process Engineering

Are you an experienced and ambitious researcher looking for your next challenge? Do you have a passion to uncover new methodologies for the treatment of load-bearing bones? Do you want to further your career in one of the UK's leading research intensive Universities?

Hard-soft tissue interface based materials engineering research is required for bone and oral tissue engineering, using novel fabrication technique such as calcium phosphate based bio-mineral synthesis, soft-macromolecular materials (e.g. chitosan) for bone implants and tooth enamel surface engineering. The project aims to integrate materials synthesis with ultra-fast laser processing for tissue integration in vitro leading to future in vivo studies. The project aims to apply the techniques developed for damaged implant restoration in damaged bone and in enamels and surrounding gum tissue.

You will undertake research developing a biomaterial to substitute damaged hard-soft tissue and then sintering using ultra-fast lasers.

What does the role entail?

As a Research Fellow, your main duties will include:

- Fabrication and characterisation of the biomaterial for damaged tissue restoration;
- Sintering of materials with femtosecond laser;
- Characterization of the sintered area using chemical and process engineering approaches, which may be applied to bone and enamel restoration engineering;
- Applications in implant re-engineering and tissue remodelling;
- Cell cultivation and histological studies for exploring the regenerative potential of the 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;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- 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?

As a Research Fellow you will have:

- PhD in Chemical or Mechanical or Materials Engineering or a directly relevant area of transport processes in cellular/tissue environment;
- Demonstrable knowledge in the field of fluid mechanics, 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 and work effectively under pressure;
- A proven track record of peer-reviewed publications in high impact journals;
- 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 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](#) and the School of [School of Chemical and Process 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.

