



NUI Galway  
OÉ Gaillimh



HR EXCELLENCE IN RESEARCH

## Research Fellow in Orthopaedic Implant Development

***'OsteoAnchor Short Stem Shoulder Implant Development'***

**Mechanical Engineering, College of Science and Engineering**

**NUI Galway**

**Ref. No. NUIG 203-19**

Applications are invited from suitably qualified candidates for a full-time fixed term position as a Research Fellow with Mechanical Engineering at the National University of Ireland, Galway.

This position is funded by Enterprise Ireland and is available from mid November 2019 to mid May 2020.

NUI Galway have successfully been awarded funding for an Enterprise Ireland Express Innovation Partnership. This is in conjunction with Loci Orthopaedics Ltd, a spinout company from the BioInnovate program at NUI Galway that has taken a licence for the commercialisation of a surface architecture for cementless orthopaedic implants, OsteoAnchor, from NUI Galway and originally developed in an Enterprise Ireland funded projects.

The OsteoAnchor technology is an additively manufactured surface finish for use in orthopaedic implants, made up of sharp claws overlying a series of pillars and struts, and enables an implant to gain immediate fixation, via the sharp claws, and long term fixation, as the bone grows around the pillars and struts. This technology has been proven to provide enhanced fixation and osteointegration (bone growth around the implant), compared to other surface finish methods e.g. plasma-spray coating.

Loci Orthopaedics Ltd does not have the ability to reduce this technology to practice i.e. application of the surface finish to a short stem shoulder implant design, finite element analysis, prototyping, mechanical testing and microscopy. Therefore, the company is seeking the input and collaborative support of NUI Galway in (i) adapting this technology for a short stem shoulder implant, and (ii) additively manufacturing prototypes to assess the clinical feasibility of this application of the technology.

### **Job Description:**

The successful candidate will be responsible for the design, manufacture and experimental characterisation of a novel orthopaedic implant. This will involve direct metal printing at NUI Galway, test rig development, sample preparation and analysis using microscopy, and calibration and validation of finite element models based on experimental testing.

**Duties:**

The successful candidate will be responsible for a range of project tasks including:

- Design, development and manufacturing of a novel orthopaedic implant.
- Develop, calibrate and validate an experimental test rig for implant testing.
- Microstructural analysis (optical and scanning electron), and computed tomography.
- Development of finite element models of the anatomy and implant.
- Liaise with team members at NUI Galway and Loci Orthopaedics Ltd.
- Assist in the preparation of further research proposals e.g. H2020, DTIF etc.
- Assist in the preparation of Enterprise Ireland technical and financial reports and reviews.

**Essential requirements:**

- Ph.D. in Mechanical Engineering or a closely related discipline.
- Evidence of experience in CAD, additive manufacturing, experimental testing, microscopy and finite element analysis.
- Excellent written and verbal English
- Good communication skills

**Desirable Requirements:**

- Medical Device Industry experience
- Intellectual property filing

**Salary:** €54,717 per annum

**Start date:** Position is available from mid November 2019

**Continuing Professional Development/Training:**

Researchers at NUI Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans.

Further information on research and working at NUI Galway is available on [Research at NUI Galway](#)

For information on moving to Ireland please see [www.euraxess.ie](#)

For information on Loci Orthopaedics Ltd, please see <http://www.lociorthopaedics.com/>

Informal enquiries concerning the post may be made to Dr Noel Harrison ([noel.harrison@nuigalway.ie](mailto:noel.harrison@nuigalway.ie))

**To Apply:**

Applications to include a covering letter, CV, and the contact details of three referees should be sent, via e-mail (in word or PDF only) to Dr Noel Harrison ([noel.harrison@nuigalway.ie](mailto:noel.harrison@nuigalway.ie))

Please put reference number **NUIG 203-19** in subject line of e-mail application.

**Closing date for receipt of applications is 5.00 pm 8<sup>th</sup> November 2019**

**Interviews are planned to be held on Friday 15<sup>th</sup> November 2019**

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment

National University of Ireland, Galway is an equal opportunities employer.

