



Postdoctoral Researcher – Sensor Design/Electrical Engineering

**BiInnovate and the School of Medicine
NUI Galway**

Ref. No. NUIG 020-18

Applications are invited from suitably qualified candidates for a full time, fixed term position as a Postdoctoral Researcher acting as Technical Lead (Sensor Design) on a project within BiInnovate and the School of Medicine at the National University of Ireland, Galway.

This position is funded by Enterprise Ireland and is available from 1st March 2018 to 31st December 2018.

This position relates to Stage 1 of a project that focuses on the commercialisation of a wound care medical device, but it is expected that the role will carry into Stage 2 of the project, subject to successful attainment of project milestones, enabling access to a further 12 months of secured funding. Furthermore, the commercial nature of this project may provide opportunities for acquiring future funding to support the foundation of a start-up, should achievement of milestones be successful.

Job Description:

The successful candidate will have the opportunity to join a dynamic and motivated team developing a medical product for use in wound care, specifically venous leg ulcer (VLU) treatment. The candidate will be involved in developing early prototypes of a pressure sensing, 'smart' compression device in a fast-paced environment. The candidate will be responsible for testing and assisting in the creation of pressure sensing materials that can integrate into VLU compression therapies, generating tailored transducer/transmitter prototypes and calibration algorithms for pressure measurement conversions, and designing a user-friendly interface to display and record the measurements upon wireless transmission. In addition to working closely with other members of the internal technical team, they will also engage with suppliers and external design firms to collaboratively establish a proof-of-concept medical device.

Duties:

- Work and collaborate in a team with broad expertise in areas associated with medical device development
- Have oversight and provide technical leadership over the development of the entire pressure sensing system
- Engage in the development of proprietary technology with an awareness of existing pressure sensing technologies and their potential for implementation within medical devices
- Research and develop pressure sensing materials/devices capable of integration into compression therapies
- Design and conduct experiments to assess the sensitivity, accuracy, and reproducibility of pressure sensing devices under conditions relevant to the application of compression therapy
- Select and use off-the-shelf hardware in the design of a proof-of-concept transducer, including optimisation of the transducer configuration
- Develop calibration algorithms for the conversion of sensor signals to pressure measurements
- Assist with the generation of a user-friendly interface for display and recoding of pressure measurements
- Proactively identify technical solutions and risks for project deliverables
- Work with external design firms in the transfer of knowledge required for development of a proof-of-concept, minimum viable product
- Assist in the fabrication and testing of a proof-of-concept product in a healthy volunteer study
- Provide input into the co-ordination of a healthy volunteer study, including data acquisition and evaluation

- Documenting work in line with quality systems, to satisfy regulatory approval requirements (e.g. CE Mark and FDA)
- Iterative prototyping of entire pressure sensing, smart compression device
- Collaborate and manage external suppliers of different components

Qualifications/Skills required:

Essential Requirements:

- PhD in Electrical Engineering (or related field) and a minimum of 4 years research/industrial experience
- Evidence of expert knowledge in the area of sensor design (preferably pressure sensing): signal acquisition, transducer development, calibration algorithms, signal transmission
- Demonstrable experience in microcontroller/microprocessor hardware interfacing and programming languages (e.g. C/C++)
- Programming skills in a language/software relevant to the development of a user interface (e.g. Java)
- Track record in a research and development environment
- Motivated and independent person, dynamic, creative thinker and problem solver
- Clear evidence of good leadership skills and team player
- Excellent verbal and written communication skills

Desirable Requirements:

- Experience with connected health projects would be beneficial
- An understanding of medical device development requirements (e.g. compliance with regulatory requirements, generation of intellectual property)
- Good knowledge of wireless communication protocols

Salary: €41,003 per annum

Start date: from 1st of March 2018

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

Further information about BioInnovate is available at www.bioinnovate.ie and further information about the School of Medicine is available at www.nuigalway.ie/medicine/.

Informal enquiries concerning the post may be made to Dr Andrew Cameron (andrew.cameron@bioinnovate.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 Andrew Cameron (andrew.cameron@bioinnovate.ie) Please put reference number **NUIG-020-18** in subject line of e-mail application.

Closing date for receipt of applications is 5.00 pm, Friday, 16th February 2018

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.