Ollscoil na Gaillimhe
University of Galway

An Roinn Fiontar, Trádála agus Fostaíochta
Department of Enterprise, Trade and Employment

HR EXCELLENCE IN RESEARCH

Research Fellow - Bioelectronics

Biomedical Engineering, School of Engineering

Ref. No. 011773

JOB ADVERTISEMENT

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

This position is funded by Department of Business, Enterprise, and Innovation through the Disruptive Technologies Innovation Fund (DTIF). The post is available up to 24 months in duration from the earliest suitable start date.

The post will be based within the Bio-Electromechanics research programme of the Translational Medical Device Lab (TMDLab), an award-winning, multidisciplinary group of over 25 researchers co-located across the HRB Translational Research Facility at Galway University Hospital and the Alice Perry Engineering Building. The lab has a strong track record in first-in-human studies, patented technologies, and industry collaboration. **The Bio-Electromechanics programme is led by Co-Director Dr Eoghan Dunne,** whose research direction focuses on how mechanical forces fundamentally alter the electrical behaviour of biological tissue, with the goal of redefining how electromagnetic energy is measured and applied in clinical settings. His work combines rigorous biophysical modelling with hands-on medical device development, contributing to technologies in cardiac ablation, cancer treatment, and minimally invasive interventions. Dr Dunne has secured over €5 million in competitive funding and published in leading journals including IEEE Transactions on Biomedical Engineering. Researchers joining this environment will work on high-impact problems within a clinically connected ecosystem, with strong mentorship, access to translational infrastructure, and clear pathways toward both academic and commercial impact.

Salary: Research Fellow salary scale €66,548 – €86,874 annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.
The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale.
(Research Salary Scales - University of Galway)

Closing date for receipt of applications is 17:00 (Irish Time) on 22/05/2026. It will not be possible to consider applications received after the closing date.

***Please review full job description for further details and essential requirement**

JOB DESCRIPTION

Job Description:
The successful candidate will lead the development of sensing systems and signal analysis methodologies for investigating tissue–device interaction in minimally invasive therapeutic delivery systems.

The role focuses on the design, implementation, and validation of sensing approaches to capture signals arising from physical interaction, and the development of analytical frameworks to interpret these signals in complex biological environments. Working within a multidisciplinary research programme, the candidate will contribute to understanding how mechanical interaction in biological tissue influences measurable electrical and physical responses.

The role involves close collaboration with experimental researchers generating structured experimental data, using these data to develop robust sensing strategies, signal processing pipelines, and data-driven models. The successful candidate will take technical ownership of the sensing and data interpretation workstream, contributing to both methodological development and translational application.

The role offers opportunities to lead publications, contribute to technical direction, and engage in supervision and collaborative research activities, supporting progression toward independent research and technical leadership.

Duties:

- Lead the design and development of sensing and measurement systems for capturing signals during tissue–device interaction
- Contribute to the prototyping and implementation of sensing and measurement systems, including integration of sensors, instrumentation, and data acquisition components
- Define and implement signal acquisition and processing pipelines for complex experimental data
- Design and apply feature extraction and signal analysis methods to interpret interaction dynamics
- Develop data-driven models, including statistical and machine learning approaches, to classify or characterise interaction states
- Work with experimental datasets to establish relationships between physical interaction and measurable signals
- Contribute to the definition of experimental data requirements to support sensing and analysis objectives
- Integrate sensing systems with experimental platforms developed by the research team
- Validate sensing and analysis approaches across: benchtop systems; biological tissue experiments; preclinical studies
- Progress sensing and analysis workstreams from concept through to validated, publishable outcomes
- Contribute to the development of robust and scalable sensing methodologies suitable for translational applications
- Take a leading role in developing and delivering high-quality peer-reviewed publications in sensing, signal processing, and data analysis
- Present research findings at group meetings, conferences, and external events
- Maintain accurate research records and ensure compliance with data management and research standards
- Contribute to the mentoring and co-supervision of students and junior researchers, as appropriate
- Contribute to method development and intellectual property generation
- Support the broader research activities of the group

- Contribute to the effective operation of the research environment, including adherence to relevant data management, laboratory, and safety procedures
- The post holder will report to and work under the direction of the Principal Investigator
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- PhD plus 4–6 years of relevant postdoctoral research experience, or equivalent research experience, in Biomedical Engineering, Electrical Engineering, Electronic Engineering, or a closely related discipline
- Demonstrated experience in signal processing, sensing systems, or data analysis in biomedical or physical systems
- Experience working with experimental or measurement data from physical systems
- Experience developing and implementing data analysis pipelines using Python, MATLAB, or similar tools
- Experience with feature extraction and interpretation of complex datasets
- Demonstrated experience designing or working with measurement or sensing systems
- Track record of peer-reviewed publications in relevant areas
- Strong written and verbal communication skills in English

Desirable Requirements:

- Experience with bioelectrical, electrical impedance Spectroscopy, or dielectric measurement systems
- Experience applying machine learning or statistical modelling techniques to experimental data
- Experience integrating sensing systems with experimental or physical platforms
- Experience working with biological or biomedical datasets
- Experience in translational or medical device research environments
- Experience working in interdisciplinary research teams
- Familiarity with real-time data acquisition systems
- Experience contributing to method development or intellectual property generation

As part of the application, it is expected that the applicant will submit a CV and a cover letter highlighting their motivation for the role and their fit, in particular, on how they meet the essential and desirable criteria.

CONTINUING PROFESSIONAL DEVELOPMENT

Continuing Professional Development/Training:
Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see HERE for further information.

FURTHER INFORMATION/LINKS

- **TO APPLY:** Search Current University of Galway vacancies. Applications must be submitted online.

- How to apply guide

- For informal enquiries, please contact Dr Eoghan Dunne, Lecturer in Biomedical Engineering, School of Engineering, Email eoghandonncha.dunne@universityofgalway.ie
- University's Strategic Plan
- Working in Research at University of Galway
- Moving to Ireland (Euraxess)
- Applicant Information
- We reserve the right to re-advertise or extend the closing date for this post.
- University of Galway is an equal opportunities employer.
- All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment.