Developing and optimising doped magnetoelectric thin-films for wireless power and data transfer at radio frequencies (RF)

About the Project

Start date is flexible: between Oct 2025 and Jan 2026 depending on student's status

Highly motivated candidates are invited to apply for a fully funded 4-year PhD position (funding is at 'home student' fee rate only) in the James Watt School of Engineering at the University of Glasgow, available to commence on 1st October 2025. The student will join a vibrant, multidisciplinary research team working at the interface of materials science, nanofabrication, and biomedical engineering as part of the NEUROBOT project, funded by the Advanced Research and Invention Agency (ARIA) and involving several UK and international partner organisations (Universities of Manchester, Exeter, Newcastle, Istituto Italiano di Tecnologia, and Neurobite Technologies Ltd).

The NEUROBOT vision is to develop next-generation neurostimulation devices capable of precise closed-loop monitoring and steering of spatiotemporal stimulation patterns tailored to patient-specific functional idiosyncrasies. This innovation has the potential to transform the predictive management of brain diseases and open up entirely new paradigms in precision neurotechnology.

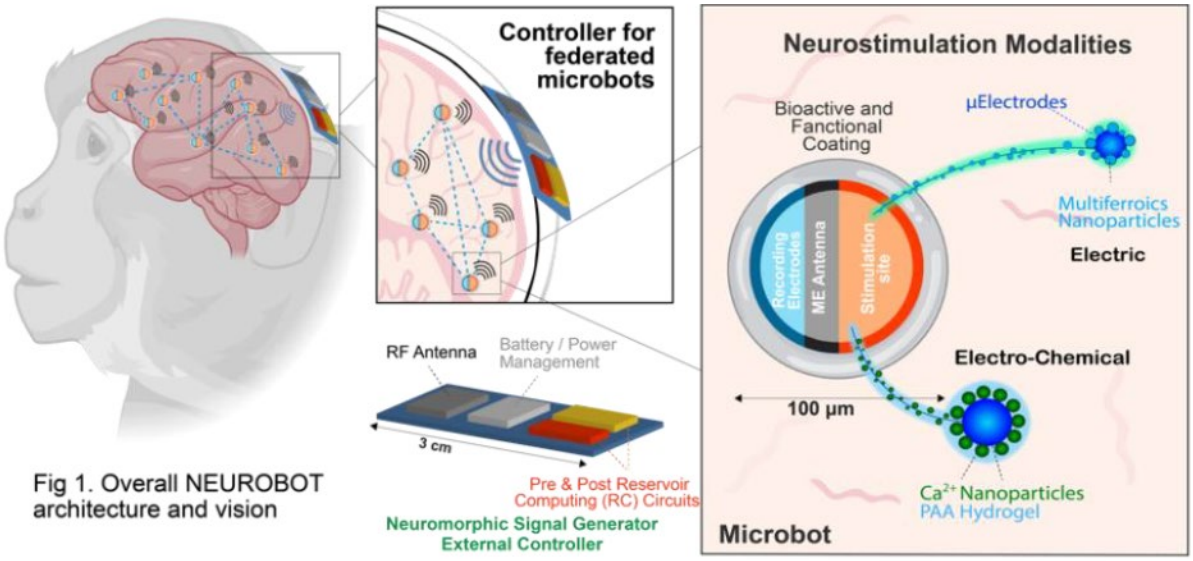

Fig 1. Overall NEUROBOT architecture and vision

The successful candidate will focus on developing and optimising doped magnetoelectric thin-films for wireless power and data transfer at radio frequencies (RF). A core element of the work will involve integration of these materials with resonating devices currently being developed at the James Watt Nanofabrication Centre, one of the most advanced cleanroom facilities in the UK.

At the materials level, the student will design and implement advanced characterisation protocols, including vector network analyser (VNA)-based ferromagnetic resonance spectroscopy, to evaluate and tune magnetoelectric performance. The role will require

a strong interest in both materials development and device integration, as well as the ability to collaborate across disciplines with electronics engineers, materials scientists, and neuroscientists across multiple institutions.

This project provides exceptional opportunities for career development, including:

- Working in two complementary research environments — the University of Glasgow's cutting-edge nanofabrication facilities and partner laboratories in the NEUROBOT consortium.
- Hands-on experience in advanced thin-film deposition, doping techniques, and RF characterisation.
- Exposure to translational research with direct relevance to emerging neurotechnologies.
- Regular collaboration and knowledge exchange with a network of world-leading academic and industrial researchers.

Eligibility:

We are looking for a motivated candidate with broad scientific interests and a willingness to work across disciplinary boundaries. Applicants must hold (or expect to hold by the start date) a 1st or upper 2nd class MSc / MEng / BSc (Hons) degree or equivalent in a relevant discipline (materials science, electrical engineering, physics, nanotechnology, or a related field). Experience in thin-film deposition, materials characterisation, or RF devices is an advantage but not essential — training will be provided. Experience of cleanroom work is also desirable.

The University of Glasgow was founded in 1451 and is ranked among the top 100 universities in the world. The James Watt School of Engineering hosts internationally recognised research in nanotechnology, advanced materials, and bioelectronics, and offers a vibrant, collaborative environment for postgraduate research.

Interested parties should contact Dr Carlos Garcia Nunez directly carlos.garcianunez@glasgow.ac.uk including a current CV before applying via the University website.

It is the University of Glasgow's mission to foster an inclusive climate, ensuring equality in our working, learning, research, and teaching environment. We strongly endorse the principles of Athena SWAN, including a supportive and flexible working environment, with commitment from all levels of the organisation in promoting gender equality. As an Athena SWAN Bronze Award holder, the James Watt School of Engineering actively supports applications from all sections of society. More details of our Athena SWAN activities can be found here:

https://www.gla.ac.uk/schools/engineering/athenaswan/

How to Apply: Please refer to the following website for details on how to apply:

http://www.gla.ac.uk/research/opportunities/howtoapplyforaresearchdegree/

Funding Notes

This studentship is fully funded at 'home fee' rate for 4 years. Funding covers tuition fees, plus a stipend at the UKRI Research Council rate (£20,780 for Session 2025–26), and an additional contribution to support research and training costs. International students would pay the difference between home and international fees. University of Glasgow - Postgraduate study - Postgraduate research opportunities A-Z - Fees

Contact

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