IMPERIAL

Research Associate in Brain Organoids and Organ-on-Chip Platforms

Department/Division/Faculty:	Department of Electrical and Electronic Engineering, Faculty of Engineering
Campus/Location:	South Kensington
Job Family/Level:	Research Job Family, Research Associate* (Research salary scale)
Responsible to:	Professor Pantelis Georgiou,
Line management for:	n/a
Key working Relationships (Internal):	Other researchers in the Georgiou Lab, Mark Johnson, Dept Metabolism, Digestion & Reproduction, Chelsea & Westminster Hospital
Key Working Relationships (External):	Prof. Manahel Thabet, King Abdulaziz City for Science and Technology (KACST)
Contract type:	Full-time, fixed term for up to 24 months

Purpose of the Post

Join a team building the next generation of brain-organoid-on-chip systems, using semiconductor technology.

The group of Prof. Pantelis Georgiou at Imperial College London is a world-leading centre for lab-on-chip systems, applying semiconductor technology to some of the most pressing global healthcare challenges. We take ideas from concept to working devices, through clinical validation and translation, building integrated sensing platforms on CMOS technology and microfluidics for biological applications.

We are now extending this work into complex three-dimensional organoid models, through a new, ambitious programme to develop brain-organoid-on-chip platforms in partnership with colleagues in Medicine. This is a rare chance to shape a new field from the start, with the engineering capability to put sensing directly into your organoid models.

We are seeking a biologist to provide biological leadership for this programme. You will define and validate the brain-organoid protocols and device-compatible culture methods that underpin the platform, and you will have real influence over its scientific direction. Within two years, you will deliver validated protocols and culture methods that work on our semiconductor devices. You will work as a genuine equal with engineers, who will build sensing and device solutions around your biology.

Imperial offers an outstanding setting for this work, with world-class cleanroom, imaging and bioengineering facilities on hand, and a close, collaborative community across engineering and medicine. You will join a multidisciplinary team where you can build an independent research profile, develop your own ideas, and gain experience in a field set to grow quickly.

Key Responsibilities

Research Duties (about 80%):

- To establish and optimise brain organoid generation from human pluripotent stem cells, including quality control and batch reproducibility
- To develop culture, maintenance and handling methods compatible with chip substrates, microfluidics and sensing electronics
- To perform biological characterisation: histology, immunofluorescence, confocal or light-sheet imaging, qPCR and, where relevant, single-cell or bulk transcriptomics
- To run functional assays, including viability, metabolic and, in collaboration with device colleagues, electrophysiological or sensor-based readouts
- To collaborate with engineers on iterative device design and testing
- To analyse, interpret and curate data in line with good research data management practice
- To take initiatives in the planning of research
- To direct the work of small research teams
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data
- To conduct data analysis
- To ensure the validity and reliability of data at all times
- To maintain accurate and complete records of all findings
- To conduct and plan own scientific work with appropriate supervision.
- To maintain highly organised and accurate record of experimental work

Dissemination and impact (about 10%)

- To write and co-author peer-reviewed publications and present at national and international meetings
- To contribute to intellectual property identification and, where appropriate, commercialisation discussions

Group and laboratory (about 10%)

- To set up and maintain tissue culture facilities and protocols for the group, including safety, ethics and compliance for human stem cell work
- To support supervision of research students and promote a collaborative working culture

- To contribute to grant writing and reporting
- To promote the reputation of the Group, the Department and the College
- To actively participate in the research programme of the Group, including research meetings and internal seminars
- To contribute to the smooth running of the Group's laboratories and, facilities with other scientists, clinicians, technicians and students within the laboratories

Other Duties:

- To develop contacts and research collaborations within the College and the wider community
- To collaborate with other allied scientists within Imperial College and elsewhere in London and abroad, as appropriate
- To comply with the College, Division, and Unit safety practices and to attend courses on safety when appropriate
- Any other duties as may be deemed reasonable by Head of group as well as Head of Division/Department/Section

- To undertake any necessary training and/or development
- To undertake appropriate administration tasks
- To attend relevant meetings

Where Imperial or funder conditions necessitate, you will be required to complete timesheets for your work on projects in a timely manner.

Person Specification

Requirements Candidates/post holders will be expected to demonstrate the following:	**Essential (E)/ Desirable (D)**
Education	
Hold a PhD in stem cell biology, bioengineering, neuroscience, developmental biology, tissue engineering or a related discipline, or equivalent research, industrial or commercial experience **Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant.*	E
Experience	
Proven experience culturing human pluripotent stem cells and producing 3D neural models, ideally brain organoids	E
Experience in imaging and standard molecular and cell biology assays	E
Experience in experimental design for brain organoid studies such as drug-response testing, culture-condition comparisons and electrical stimulation protocols	E

Evidence of research output, such as publications or preprints, appropriate to career stage	E
Experience with microfluidic or organ-on-chip systems, microelectrode arrays or other biosensing platforms	D
Experience with electrophysiology or calcium imaging of neural tissue	D
Experience of compliance for human stem cell and genetically modified organism work in the UK	D
Experience supervising students	D

Knowledge

Familiarity with image analysis or data analysis in Python, R, MATLAB and/or ImageJ	D
Interest in translation and commercialisation	D
Knowledge of research methods and statistical procedures	E

Skills & Abilities

Strong skills in mammalian cell culture and aseptic technique	E
Ability to work independently and manage a project to deadlines	E
Excellent written and spoken English	E
Willingness to work closely with researchers from engineering and physical sciences backgrounds	E
Ability to conduct a detailed review of recent literature	E
Ability to develop and apply new concepts	E
Creative approach to problem-solving	E
Excellent verbal communication skills and the ability to deal with a wide range of people	E
Excellent written communication skills and the ability to write clearly and succinctly for publication	E
Advanced computer skills, including word-processing, spreadsheets and the Internet	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to undertake any necessary training for the role	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences	E

Willingness to work out of normal working hours (including weekends) if the requirements of the project demand	E

Further Information

Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Our values are at the root of everything we do and everyone in our community is expected to demonstrate Imperial:

- Respect
- Collaboration
- Excellence
- Integrity
- Innovation

Employees are also required to comply with all Imperial policies and regulations.

We are committed to equality of opportunity, to eliminating discrimination and to creating an inclusive working environment for all. We encourage candidates to apply irrespective of age, disability, marriage or civil partnership status, pregnancy or maternity, race, religion and belief, gender reassignment, sex, or sexual orientation. You can read more about our commitment on our webpages.

Imperial is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/

Imperial believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes which are ultimately aimed towards finding new treatments and making scientific and medical advances, and where there are no satisfactory or reasonably practical alternatives to their use. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in our care are treated with full respect, and that all staff involved with this work show due consideration at every level. Find out more about animal research at Imperial.

November 2026