



<b>Job title</b>	Research Associate/Fellow (Title will be 'Research Associate' where an appointment is made before PhD is completed)	<b>Job family and level</b>	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
<b>School/ Department</b>	Faculty of Engineering – Optics and Photonics Research Group	<b>Location</b>	Optics and Photonics labs, School of life Sciences building, University Park

## Purpose of role

The successful candidate will work closely with a research team to develop next generation electrostatic force microscopy technology. This new tool will provide unprecedented access to electrostatic force/charge of biomolecules in complex 3D cell environments. Working with collaborators in Schools of Pharmacy and Medicine, the developed method will be applied to understand the function of electrostatic charge in cancer development and progression.

The role is part of a 20-month project that has been recently funded by UKRI New Horizons Awards. The candidate will take an active role in planning and conducting microscopy experiments. The candidate will perform finite-element simulations to understand the physics and engineering fundamentals and design a set of bespoke electrode configurations. Carefully designed and fabricated electrodes with well-defined electrical characteristics are required for the development of this new microscopy technology.

The role holder is expected to produce high impact publications, disseminate results at national and international conferences, undertake supervision of students, and work closely with collaborators in Nottingham and externally to deliver project outcomes.

	<b>Main responsibilities</b> (Primary accountabilities and responsibilities expected to fulfil the role)	<b>% time per year</b>
1	Plan and deliver day-to-day research activities and associated administrative tasks. This includes optical microscopy experiments, data analysis, microfabrication of electrodes, and finite elements modelling of electrical properties of electrodes and bio samples.	60%
2	Attend regular meeting with research team and collaborators and actively engage in generating concepts and testing new ideas	10%
3	Writing new research proposals	5%

4	Production of reports and publications, dissemination of results - presentations and travel to meetings and/or outreach to the industry, scientific community and general public	15%
5	Research Supervision. As a member of the research group, supervise postgraduate students, regularly liaising with researchers and other students in the team. Responsible for training of new researchers and support in ensuring that project objectives are achieved.	5%
6	Any other duties appropriate to this post as required by their line manager	5%

## Person specification

	Essential	Desirable
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Computational skills and/or experience applying mathematical methods to one of the following: electrophysiology, electrochemistry or biophysics.</li> <li>• Finite element modelling of biological cells and/or electrodes</li> <li>• Good communication skills.</li> <li>• Successful Team work</li> <li>• Proactive, able to manage time effectively to prioritise and deliver project activities</li> <li>• Able to work collaboratively with researchers external to our team to support ongoing collaborations and/or initiate new collaborative opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Skills in one of the following:               <ul style="list-style-type: none"> <li>- optical microscopy design and/or operation</li> <li>- experience in optical trapping</li> <li>- Live cell imaging and fluorescence imaging</li> </ul> </li> <li>• Sterile technique for working with cells</li> </ul>
<b>Knowledge and experience</b>	<ul style="list-style-type: none"> <li>• Knowledge and experience in at least one of the following:               <ul style="list-style-type: none"> <li>- Electrochemical methods in biology</li> <li>- Electrophysiology</li> <li>- Optical microscopy</li> <li>- Electrostatics</li> </ul> </li> <li>• Experience in disseminating research findings</li> <li>• Working successfully with a research team</li> <li>• Experience of working in scientific research environment</li> </ul>	<ul style="list-style-type: none"> <li>• Experience in electrostatic force microscopy</li> </ul>
<b>Qualifications, certification and training (relevant to role)</b>	<ul style="list-style-type: none"> <li>• PhD (or about to obtain) in an appropriate field (Engineering, Mathematics, Physics, Chemistry, Biology or Computer Science)</li> </ul>	



The University strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women's careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.

## Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

<b>Valuing people</b>	Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.
<b>Taking ownership</b>	Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.
<b>Forward thinking</b>	Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
<b>Professional pride</b>	Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.
<b>Always inclusive</b>	Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

## Key relationships with others

