



Job title	Research Associate/Fellow (Title will be 'Research Associate' where an appointment is made before PhD is completed)	Job family and level	Research & Teaching Level 4 (Appointment will be Level 4 Career Training Grade where an appointment is made before PhD has been completed)
School/ Department	School of Physics and Astronomy	Location	University Park Campus

Purpose of role

To carry out experimental research in the area of optical memristor devices.

The researcher will be a member of the Kemp Nano Electronics group (<https://kempnanogroup.com/>) in the School of Physics and Astronomy. This group is part of the Experimental Condensed Matter and Nanoscience research grouping.

The main responsibility of this post will be to carry out experimental research involving the fabrication and testing of optical memristors device, with the aim of enhancing the switching speeds and device sensitivity to ambient light levels.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	To plan and conduct primary research towards the goals of the research project.	75 %
2	To write up research work for publication and contribute to the dissemination of research at scientific conferences. To assist in the dissemination of research outputs to the general public.	10 %
3	To assist where appropriate with supervising undergraduate and postgraduate students projects as appropriate.	5 %
4	To build relationships with both internal and external contacts in order to exchange information, to form relationships for future collaborations and identify potential sources of funds and/or opportunities for collaboration.	5 %
5	To develop own research ideas in the optical memristor field, and collaborate with academic colleagues on areas of shared interest for example, collaborative or joint research projects.	5 %

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex information. ▪ Strong capability to analyse and illuminate data, interpret reports, evaluate and criticise texts and generate new insights. ▪ Ability to apply creatively relevant research approaches, experimental techniques and methods. ▪ Ability to assess and organise resource requirements and deploy effectively. ▪ Ability to build relationships and collaborate with others, both internally and externally. 	<ul style="list-style-type: none"> ▪ Ability to design and assemble complex opto-electronic experiments. ▪ Good computer programming skills. ▪ Device fabrication and characterisation skills.
Knowledge and experience	<ul style="list-style-type: none"> ▪ Experience in at least one of the following: <ul style="list-style-type: none"> ▪ Vacuum systems and thin-film deposition methods including sputtering. ▪ Photolithography and cleanroom skills. ▪ Field of lasers and optics. 	<ul style="list-style-type: none"> ▪ Experience in testing memristor devices. ▪ Experience of low-temperature measurement techniques. ▪ Experience of materials research. ▪ Experience in Labview programming to control experiments and acquire data.
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> ▪ Ph.D. (or Ph.D. nearing completion) in condensed matter physics, materials science or electrical engineering and a strong interest/experience in developing new types of solid-state devices for neuromorphic computing and artificial intelligence technologies. ▪ Undergraduate degree in Physics, Electrical Engineering, or appropriately related discipline. 	<ul style="list-style-type: none"> ▪ Ph.D. in memristor device fabrication and measurement.



The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

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:

- Valuing people** Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as H&S, EDI and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

