University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Fellow (Title will be 'Research Associate' where an appointment is made before PhD is completed)	Job family and level	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade, where an appointment is made before PhD has been completed)
School/ Department	Electrical and Electronic Engineering	Location	University Park

Purpose of role

The purpose of this role is to design, build, develop and use instrumentation in the area of picosecond ultrasonics for its application in cancer research. The person appointed will be expected to plan and conduct work using approaches or methodologies and techniques appropriate to meet the requirements of cancerous cells and tissue, and will be responsible for writing up their work for publication. The candidate will have the opportunity to use their initiative and creativity to identify areas of opportunity to develop research methods and extend their research portfolio.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**
1	To undertake research based on the objectives of specific research projects in the area of picosecond ultrasonics applied to cancer	30%
2	To build and maintain picosecond ultrasonic systems	20%
3	To process, analyse, and present data, interpret reports, evaluate and criticise texts and bring new insights to the research area.	20%
4	To write up research work for publication and/or contribute to the dissemination at national/international conferences, resulting in successful research outputs.	10%
5	To identify opportunities and assist in writing bids for research grant applications. Prepare proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.	10%
6	To provide support, guidance and supervision to other staff, or PhD, MSc or undergraduate students as appropriate in own area of expertice.	10%

Person specification

	Essential	Desirable
Skills	▪ Designing and building free-space or fibre optical systems. ▪ Proficient in signal processing (Matlab, Python) ▪ Excellent scientific writing skills. ▪ Excellent communication skills. ▪ Proficient in analysing data. ▪ Proactive, self motivated	▪ Starting, maintaining and preparing cell cultures. ▪ Finite element modelling in comsol, matlab or python ▪ Experience in nanofabrication, particularly sputtering, TEM, FIB and similar.
Knowledge and experience	▪ Experience working with CW and pulsed class 4 lasers. ▪ Experience with designing and building mircroscopes and or imaging systems. ▪ Experience with spectroscopy ▪ High-quality publication track record.	▪ Experience with Picosecond ultrasonics using ASOPS or delay lines. ▪ Familiar with the physical acoustics concepts related to generation and propagation of ultrasound. ▪ Familiar with imaging and characterisation of biological tissue. Fluorescence, Confocal and similar. ▪ Familiar with hardware implementation and drive programming (c,c++)
Qualifications, certification and training (relevant to role)	▪ PhD (or about to obtain) in Engineering or Physics with an optics-related topic. ▪ OR near completion of a PhD	PhD (or about to obtain) in picosecond ultrasonics or Brillouin scattering.
Statutory, legal or special requirements		

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 their 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 Health & Safety, Equality, Diversity & Inclusion, 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