University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Associate / Fellow in Electron Microscopy (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	Nanoscale and Microscale Research Centre (nmRC)	Location	Nanoscale and Microscale Research Centre (nmRC), Cripps South Building, University Park, Nottingham, NG7 2RD

Purpose of role

We are seeking a Research Fellow to join a collaborative multidisciplinary team working to develop Transmission Electron Microscopy (TEM) based correlative approaches for materials imaging and analyses. The role is based within the Nanoscale Microscale Research Centre (nmRC), an inter-disciplinary facility dedicated to supporting and promoting world-leading nanoscience and materials characterisation. The nmRC is a hub for state-of-the-art capabilities and the allied expertise necessary for materials imaging, chemical imaging, compositional analysis and nanofabrication.

This role will enhance the imaging capabilities of the nmRC by developing novel applications of the visionary, correlative, cryogenic microscopy facilities within the Centre. The primary focus is to drive the world-leading imaging and analyses of soft, organic and/or hydrated materials (including pharmaceutical and biological specimens) to enable new research directions within the University of Nottingham. The Research Fellow is expected to have good knowledge and practical skills relating to the imaging of beam sensitive materials, including biological/organic materials, at the micro/nano-scale as well as an understanding of current limitations of these techniques. In particular, the Research Fellow should possess skills in preparing biological/organic or soft matter samples for imaging and analysis: essential for method development and innovating solutions to the challenges presented by researchers and external users as necessary to place the nmRC at the forefront of this field. Furthermore, the contribution of the Research Fellow is essential for developing the Centre's strategic collaborations with industrial and academic partners.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**
1	To plan and conduct research using both recognised and novel innovative approaches, methodologies and techniques within the research area of soft matter imaging by electron microscopy.	30
2	To apply the new methodologies to a range of materials and train researchers in the application of soft matter imaging techniques using electron microscopy.	20

3	To analyse and illuminate data, interpret results, evaluate existing literature and bring new insights to the research area.	15
4	To write up research work for publication and/or contribute to its dissemination at national/international conferences, resulting in successful research outputs.	10
5	To identify opportunities and assist in the writing of research grant applications. To prepare proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.	5
6	To build relationships with both internal and external contacts to exchange information, to form relationships for future collaborations and identify potential sources of funds and/or opportunities for collaboration.	5
7	To co-ordinate the operational aspects of research networks (*e.g.,* arranging meetings and updating websites, *etc*.) and contribute to collaborative decision making with stakeholders.	5
8	To provide support, guidance, and supervision to other staff, where appropriate and applicable.	5
9	To utilise and contribute to organising research resources and facilities, laboratories and workshops, as appropriate.	5

Person specification

	Essential	**Desirable**
Skills	Excellent problem-solving skills to understand and advise on the application and limitations of a range of analytical techniques in the analyses of beam-sensitive, biological or soft matter samples (*e.g.,* light microscopy, electron microscopy, particle sizing, *etc*). Proven ability in innovative and effective experimental research / characterisation of beam-sensitive, biological or soft matter materials. Excellent oral and written communication skills, including the ability to communicate with clarity on complex information and write to a publishable standard. High analytical ability to analyse and illuminate data and interpret results. Excellent IT and organisational skills. Ability to creatively apply relevant research approaches, models, techniques and methods, as evidenced by peer-reviewed publications commensurate with career stage. Ability to build relationships and collaborate with others, both internally and externally.	Ability to assess and organise resource requirements and deploy effectively.
Knowledge and experience	Significant knowledge and hands-on experience in transmission electron microscopy. Knowledge and experience in preparing biological or soft matter samples for electron microscopy (*e.g.,* cryo preparation, fixing and staining, ultramicrotomy). Experience in training students and/or researchers.	Previous experience using cryogenic sample preparation equipment (*e.g.* high-pressure freezer, cryo-ultramicrotome). Previous success in gaining support for externally funded research projects. Experience in managing research equipment and/or laboratory space. An understanding and working knowledge of biosafety category 2 or

		3 laboratory requirements including health and safety.
Qualifications, certification and training (relevant to role)	A first or upper-second class honours degree in a physical, life science or related discipline. PhD submitted (nearly submitted is acceptable) or awarded in an area related to physical or life sciences/ pharmacy/biomedical engineering.	A PhD in an area related to the imaging and characterisation of biological structures such as cells and tissues.

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 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