University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Fellow	Job family and level	Research and Teaching Level 4
School/ Department	Schools of Pharmacy and Biosciences	Location	University Park Campus (Biodiscovery Institute)

Purpose of role

With this project, we propose to undertake the challenge of developing a holistic platform that recreates in vivo molecular and 3D-structural characteristics of main plant tissue layers, for the study and prediction of key aspects of viral tropism using unique labelled viruses comprising main viral families and novel machine learning pipelines. The role involves working within a team designing and conducting experiments using relevant techniques, analysing and writing reports and publications.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	**% time per year**
1	**Assembly and optimization of hydrogel materials** • Work with peptides and biomolecules to optimize self-assembling processes for the growth of hierarchical scaffolds. • Characterize and optimize co-assembling scaffolds using analytical techniques (ζ-potential, DLS, FTIR, CD). • Characterize and optimize structural and compositional properties of co-assembling scaffolds (AFM, cryoTEM, SEM, oscillatory rheology).	40%
2	**Biofabrication** • Incorporate the co-assembling materials within biofabrication methodologies including different types of 3D printing. • Develop biofabrication methodologies that integrated supramolecular chemistry with 3D printing.	15%
3	**Biological characterization of the scaffolds** • Characterization and optimization of cellular growth, cellular responses and functionality (3D cell culture, confocal microscopy, qPCR, immunostaining, western blotting and histology) of the scaffolds.	15%
4	**Other research activities** • To independently design, plan, execute, and analyse the experiments pertaining to the project.	10%
5	**Dissemination of research results and interaction with partners** • To significantly contribute to the writing up of research papers, reports and presentation of research findings at high level	5%

	international conferences to maintain University recognition; as well as engaging with industrial collaborators and partners.	
6	**Support junior members of the group** • To assist in the supervision and training of undergraduate or postgraduate students, and technical staff as appropriate.	5%
7	**Engage in Professional Development activities** • To continue developing professional research skills, keeping knowledge up to date through attendance at seminars and conferences, and initiate internal/external collaborations where appropriate.	5%
8	**Adhere to H&S regulations** • To contribute to the safe and well-organized functioning of the laboratory.	5%

Person specification

	Essential	**Desirable**
Skills	▪ Careful experimentalist with high attention to detail. ▪ Excellent oral and written communication skills including the ability to clearly communicate complex information. ▪ Excellent problem solving and organisational skills. ▪ Ability to build relationships and collaborate with others. ▪ Ability to work independently and as part of a team. ▪ Ability to write high quality reports and high impact papers for publication.	▪ A strong commitment to interdisciplinary research. ▪ Flexible, proactive and dedicated approach.
Knowledge and experience	▪ Experience working with both 2D and 3D hydrogels. ▪ Experience working with self-assembling peptides and peptide-based extracellular matrices. ▪ Experience with cell culture and biology assays. ▪ Experience developing in vitro models based on hydrogel systems. ▪ Experience in biofabrication and 3D printing techniques. ▪ Present work effectively to a variety of professional and academic audiences at national	▪ Experience in one or more of the following: ○ Self-assembling peptides ○ Polymer and peptide cross-linking ○ Cell and tissue culture ○ Hydrogels ○ Different microscopy techniques ○ Immunohistochemistry ○ Supramolecular chemistry ▪ First author publications in high quality journals ▪ Experience with grant writing and student supervision

	and international meetings and conferences. ▪ Proven track record of publishing research	▪ Evidence of working across chemistry/biology/materials science with an interdisciplinary approach. ▪ Recognition by external peer review (e.g. poster or conference prizes)
Qualifications, certification and training (relevant to role)	▪ PhD in Materials Science, Bioengineering, Biotechnology or related Biological Science.	

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 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.
Taking ownership	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.
Forward thinking	Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
Professional pride	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.
Always inclusive	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