

Candidate Information

Position: Research Fellow
School/Department: School of Pharmacy
Reference: 26/113700
Closing Date: Monday 19 October 2026
Salary: £42,972 - £45,576 per annum
Anticipated Interview Date: Monday 9 November 2026
Duration: Fixed Term available for 6 months

JOB PURPOSE:

To be an active member of the research team supporting the development, formulation and preclinical evaluation of a self-indicating dissolving microneedle (MN) platform for drug and vaccine delivery. Working across preclinical and clinical programme, the post holder will lead experimental activities spanning polymer formulation, molecule loading and evaluation, colourimetric characterisation, stability testing and digital data capture, with the aim of progressing the platform toward GMP manufacture and regulatory submission.

MAJOR DUTIES:

Research:

1. Develop and evaluate MNs with different payloads such as vaccines, antibodies, peptides and small molecules.
2. Design and execute accelerated and ambient stability studies to assess batch-to-batch reproducibility, shelf-life and consistency of colour-change and drug release behaviour across storage conditions.
3. Establish and curate a standardised colourimetric image dataset, capturing images of MN under controlled lighting; collaborate with software engineering colleagues on data workflows.
4. Prepare prototype MN patches and packaging materials for use in formative human factors study sessions, ensuring devices produced are representative of the intended commercial product and meet defined quality criteria.
5. Support the formulation transfer process to GMP manufacturing partners, including preparation of technical documentation, batch records and quality control data required for regulatory-grade manufacturing.
6. Carry out analytical characterisation using HPLC/MS, UV-Vis spectroscopy, fluorescence spectroscopy, colourimeter, FTIR, scanning electron microscopy (SEM) and optical coherence tomography (OCT), generating high-quality quantitative data for regulatory-facing documentation.
7. Prepare data summaries, technical reports and materials for meetings with regulatory consultants, human factors specialists, industrial partners and external stakeholders.
8. Contribute to grant-related administrative tasks including experimental records, risk assessments, consumable management and progress reporting.
9. Present research progress internally and at external conferences; contribute to peer-reviewed publications.
10. Assist in undergraduate or postgraduate supervision and demonstrating activities as appropriate.
11. Assist supervisor in the preparation of funding proposals, submissions to pharmaceutical/medical devices companies and applications to external bodies.

ESSENTIAL CRITERIA:

1. A degree in Chemistry, Pharmaceutical Sciences, Materials Science, Biomedical Engineering or a closely related discipline.
2. Have or be about to obtain* a PhD in drug delivery, polymer/materials chemistry, pharmaceutical sciences or a related field (*must be obtained within 3 months of commencement of employment)
3. Demonstrable hands-on experience in the fabrication and characterisation of microneedles.
4. Experience loading and evaluating small molecules and/or biologics (including peptides, proteins or vaccine antigens) in polymeric delivery platforms.
5. Knowledge in relevant analytical techniques including HPLC/MS, UV-Vis spectroscopy, fluorescence spectroscopy, colourimeter and FTIR.
6. Experience with optical, spectroscopic or stimulus-responsive characterisation of polymer-based materials.

7. Experience designing and executing stability studies (thermal, accelerated and/or ambient) for drug or biologic formulations
8. A record of peer-reviewed publications commensurate with career stage.
9. Ability to coordinate experimental activities across multiple concurrent work packages with defined deliverables and timelines.
10. Experience liaising with external collaborators, commercial partners or subcontractors.
11. Ability to contribute to research administration including risk assessments, consumable ordering and experimental records.
12. Practical problem-solving skills, independence of thought and the ability to troubleshoot experimental procedures.
13. Proficiency in scientific data analysis software (e.g. Origin, GraphPad, ImageJ or equivalent).
14. Ability to work effectively both independently and as part of a multidisciplinary team spanning scientific, regulatory and commercial activities.
15. Ability to present scientific data and arguments in a clear, concise and confident manner in both written and oral formats, including for technical reports and conference presentations.
16. A rigorous and conscientious approach to experimental science, with high standards of laboratory practice and record-keeping.
17. Able to work collaboratively across diverse team environments, including with regulatory consultants, human factors specialists and manufacturing partners.
18. Motivated by the translational and commercial impact of research, not only its academic outputs.
19. Willingness to engage with external subcontractors including overseas GMP manufacturing facilities.
20. Willingness to attend external partner meetings, regulatory engagement activities and scientific conferences as required.

DESIRABLE CRITERIA:

1. Additional training or experience in pharmaceutical formulation or regulatory science.
2. Experience with scanning electron microscopy (SEM) and/or optical coherence tomography (OCT) for device characterisation.
3. Experience with digital image analysis or colourimetric data processing, including standardised image capture and dataset curation.
4. Familiarity with regulatory documentation requirements for drug-device combination products.
5. Experience with batch reproducibility and quality control assessments relevant to pharmaceutical manufacture.
6. A UK personal licence for animal handling, or willingness to obtain one.
7. Experience supervising or co-supervising postgraduate or undergraduate students
8. Experience with software tools for colourimetric image standardisation or machine-learning-assisted data interpretation.
9. Interest in or experience with translational research and industry-facing outputs.
10. Experience presenting to non-scientific audiences including industry or regulatory stakeholders.
11. Existing familiarity with microneedle or transdermal delivery research

ADDITIONAL INFORMATION:

Informal enquiries can be directed to: Yaocun Li - yaocun.li@qub.ac.uk.