

## Candidate Information

<b>Position:</b>	Research Assistant in 3D Printing for Pharmaceutical Device Manufacturing
<b>School/Department:</b>	School of Pharmacy
<b>Reference:</b>	20/108431
<b>Closing Date:</b>	Monday 30 November 2020
<b>Salary:</b>	£28,331 - £32,817 per annum
<b>Anticipated Interview Date:</b>	Wednesday 9 December 2020
<b>Duration:</b>	12 months

### JOB PURPOSE:

To be an active member of the planning and delivery of a research programme on the manufacturing of drug delivery systems & medical devices using innovative 3D printing technologies within the Nano/Microfabrication research group in the School of Pharmacy. This position is suited to a highly ambitious, productive, and collaborative individual.

### MAJOR DUTIES:

1. Support the research team in developing and executing research plans within the remit of the Nano/Microfabrication for Pharmaceutical and Medical Device Manufacturing.
2. Undertake research in a programme of 3D printing for Pharmaceutical Applications, and conduct the research activities as a member of a research team.
3. Perform relevant analytical techniques e.g. texture analyser and SEM.
4. Perform in vitro and in vivo experiments.
5. Carry out analysis, critical evaluation, and interpretation using methods and techniques appropriate to area of research.
6. Maintain up-to-date knowledge of the field.
7. Present regular progress reports on research to members of the research group, external audiences and to disseminate research findings.
8. Write up results of own work and contribute to the production of research reports, publications and funding proposals.
9. Prepare, in consultation with supervisor, material for IP protection and publication. If appropriate present at national/international conferences.
10. Assist grant holder in the preparation of funding proposals and applications to external bodies.
11. Carry out occasional undergraduate supervision/demonstrating/teaching duties under the direction of a member of academic staff.
12. Carry out routine administrative tasks associated with the research project and laboratory maintenance to ensure activities are completed on time and within budget. These may include organisation of project documentation, financial control and risk assessment of activities.
13. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines. Development of a literature base.
14. Carry out any other duties designated by the line manager and which fall within the general ambit of the post.

### Planning and Organising:

1. Plan for specific aspects of research programmes. Timescales range from 1-3 months in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to-day activity within framework of the agreed research programme.
4. Plan up to 3 months in advance to meet deadlines for journal publications and to prepare posters, presentations and/or papers for conferences.
5. Coordinate and liaise with other members of the research group over work progress.

**Resource Management Responsibilities:**

1. Ensure research resources are used in the most effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.
3. Take shared responsibility for the upkeep of lab equipment and replenishment of lab stocks and exercise due diligence when using equipment.
4. Support the development and training of support staff and students.

**Internal and External Relationships:**

1. Communicate openly with lab colleagues the latest research findings/results.
2. Develop contacts with other labs within the research community at Queen's and look to identify potential cross-discipline collaborations.
3. Liaise on a regular basis with colleagues and students.
4. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
5. Join external networks to share information and ideas.
6. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.
7. Join national and international scientifically relevant societies.

**ESSENTIAL CRITERIA:**

1. Hold 1st class degree in Pharmacy, Pharmaceutical Sciences, or a closely related discipline.
2. At least 1 year recent relevant research experience.
3. Experience in the synthesis and physical characterisation of nanoparticles.
4. Experience in the use of Franz diffusion cells.
5. Experience in a variety of Drug Delivery Systems.
6. Experience in Stereolithography (SLA) and Fused deposition modeling (FDM) 3D printers.
7. Experience on Computer-Aided Design (CAD).
8. Experience in the 3D printing of Microneedles.
9. Knowledge of analytical techniques including Texture analyser, Optical microscopy, SEM.
10. Knowledge on in vitro studies and ex vivo porcine skin penetration experiments.
11. Knowledge on Syringeability studies.
12. Methodical approach to project management and meticulous in regard to experimental procedures and record keeping.
13. Sufficient breadth and depth of specialist knowledge in 3D printing for transdermal applications.
14. Ability to interact and communicate effectively with research colleagues, support staff and external networks.
15. Ability to present scientific arguments and data in a clear, concise and confident manner.
16. Ability to present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
17. Ability to communicate effectively, both verbally and in writing.
18. Ability to carry out routine administrative tasks associated with the research projects and laboratory maintenance.
19. Practical problem solving skills and independence of thought are required.
20. Ability to assess and organise resources.
21. A calm and conscientious scientist, able to work in a disciplined manner within a team environment.
22. Willingness to travel for research collaboration visits in 2-4 week periods up to a max of twelve weeks.

**DESIRABLE CRITERIA:**

1. Postgraduate qualification in a relevant area.
2. Qualified Pharmacist in EU.
3. 2 years relevant research experience.
4. Experience of assisting in preparation of materials for publication and presentations at national/international conferences.
5. Publication(s) in peer-reviewed journals commensurate with career stage.
6. Experience teaching/supervising undergraduate students and visiting researchers in the laboratory.
7. Research project management experience.