

Research Associate: Project Scientist

Department	Strathclyde Institute of Pharmacy and Biomedical Sciences (www.strath.ac.uk/science/strathclydeinstituteofpharmacybiomedicalsciences/)		
Faculty	Faculty of Science (www.strath.ac.uk/science/)		
Staff Category	Research	Reference No	507014
Reports To	Principal Investigator	Grade:	7
Salary Range:	£34308 - £36386	Contract Type:	Fixed until 31/03/2024
FTE	1 (35 hours/week)	Closing Date	06/03/2023

Job Advert

Applications are invited for project scientist/project engineer roles at grade 7 to develop the data platform to support the development of digital twins for pharmaceutical manufacturing processes at the Continuous Manufacturing and Advanced Crystallisation (www.cmac.ac.uk) Centre at the University of Strathclyde.

This role is to undertake a combination of pilot plant (data generation & development) and modelling activities (data application and model development) to support the delivery of a digital twin for continuous direct compression. This is as part of a team activity (made up of technicians, RA's and RF) reporting directly to the PI. This project is co-funded by government and industry (the MMIC partnership) with the University of Strathclyde being the delivery partner. The researcher is expected to develop a portfolio of activities to advance understanding of pharmaceutical manufacturing processes such as continuous direct compression. The researcher is expected to develop proposals and work plans to deliver against and satisfy the project goals. The researcher is expected to identify and develop opportunities for further funding and extension to future projects, either within MMIC or other funding bodies. The researcher will be required to regularly engage in knowledge exchange activities. This is critical for the dissemination and training of the research output to the end users (i.e. industrial partners and broader research community).

CMAC comprises a multidisciplinary team of academics, researchers and technical staff, providing a platform for collaborative research, training and knowledge exchange in the area of advanced pharmaceutical manufacturing. This role will support a strategic project in developing continuous direct compression of oral solid dose forms.

The CMAC Facility houses a comprehensive suite of high-value, state-of-the-art continuous processing equipment, novel monitoring and control systems and extensive off-line characterisation capabilities. This is an exciting opportunity to join a team to deliver a strategic partnership between industry-government-academia that is focussed upon developing in depth process understanding of core powdered-solid based pharmaceutical unit operations for production of oral solid dose forms.

We are seeking an individual with skills and experience in design of trials for process data generation from secondary pharmaceutical unit operations. The overall goal is for application of datasets for process model development to support the development of a demonstrator digital twin. Specifically this pilot is for a continuous direct compression pharmaceutical manufacturing process.

Main Duties: Develop protocols, workflows for data generation from pilot plant activities. Lead the execution, collation and reporting of these activities to the project team. Plan and manage own workload, with guidance from colleagues as required. Conduct individual and/or collaborative research, including determining appropriate research methods and contributing to the development of new research methods. Identify sources of funding and contribute to the securing of funds for research, including drafting grant proposals and planning for future proposals. Write up research work for publication, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, peer reviewed journal

publications and presentation at conferences. Join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding. Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish research links with industry and influence public policy and the professions. Supervise student projects, provide advice to students and contribute to teaching as required by, specifically supervision and support for MSc and PhD programs. Engage in continuous professional development.

The candidate will preferably have an honours degree 2:1 or 1st with a PhD (or equivalent professional experience) in Chemical Engineering, Chemistry, Pharmaceutical Sciences or appropriate physical science background. Additionally the candidate must be a self-starter, capable of proposing and leading activities to link pilot plant trials (data generation) and development of interfaces for digital tools (such as modelling) and processes. The candidate will be expected to regularly undertake formal reporting of results in both written and oral format to the broader technical management team.

Excellent organisational, communication and interpersonal skills will be essential. Demonstration of combining outputs from laboratory/pilot plant trials with process models is essential. Under the supervision of the Principle Investigator candidates will be able to proactively follow instructions and manage a versatile workload. The role will involve working with industry and academic partners.

Job Description

Brief Outline of Job:

The core purpose of the role is to conduct a mixture of laboratory & pilot plant trials on powder handling equipment such as feeders, blenders, tablet presses and associated process analytical tools to generate appropriate data sets for modelling manufacturing processes of pharmaceutical products.

This will involve careful development and execution of work-flows and protocols.

Working in conjunction with a lead process modeller, utilise the datasets to develop advanced process models.

These research outputs are to be disseminated to a broader academic and industrial community. The candidate will be expected to regularly update stakeholders at project meetings, produce high quality reports, engage in knowledge exchange and generate publications.

Working and conducting some process trials overseas will be required.

Main Activities/Responsibilities:

1.	Develop protocols, workflows for data generation from pilot plant activities. Lead the execution, collation and reporting of these activities to the project team.
2.	Conduct individual and/or collaborative research, including determining appropriate research methods and contributing to the development of new research methods.
3.	Develop and apply process models linking plant performance to materials attributes. Management and coordination of modelling and data capture efforts across the project
4.	Provide direct guidance to pilot plant process engineers regarding capture, structure and recording of large process data sets.
5.	Develop best practice guidance and linkages with regards data handling between pilot plant activities and process modelling.
6.	Prepare regular project reports, oral updates to inform the technical leadership team.
7.	Write up research work for publication, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, peer reviewed journal publications and presentation at conferences.
8.	Engage in continuous professional development.
9.	Provide advice to students and contribute specifically to supervision and support for MSc and PhD programs.
10.	Collaborate actively within and out with the university to deliver project outcomes, deliver knowledge exchange and advance the implementation of digital tools.
11.	Plan and manage own work load.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 The candidate will have a degree with a PhD (or equivalent professional experience) in Chemical Engineering, Chemistry, Pharmaceutical Sciences or appropriate physical science background

Experience

E2 Experience of pharmaceutical processing plant and manufacturing systems

E3 Experience of solid and powder processing methods

E4 Experience of solid/powder characterisation methods

E5 Experience of operating laboratory equipment/pilot plant for generation of process data

E6 Experience of programming packages e.g. MATLAB/C/Python and developing process models

D1 Awareness of health and safety practices within process industries

D2 Experience of knowledge exchange and dissemination activities

Job Related Skills and Achievements

E7 Highly advanced IT, digital and data handling skills

Personal Attributes

E8 Good written communication skills

E9 Good oral communication skills

E10 Ability to work independently and contribute to a team environment

E11 Ability to lead self and others

E12 Plan and manage own workload, with guidance from colleagues as required

Other Relevant Factors

D3 Ability to contribute to generation funding proposals

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to John Robertson, Principal Investigator, (j.robertson@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

Interviews

Formal interviews for this post will be held on 14/03/2023.

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.



Conditions of Employment

Research Staff

1. GENERAL CONDITIONS

Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, the Privy Council. Staff are also expected to familiarise themselves with, and adhere to, general University policies and procedures, as published on University web pages.

The University Court recognises Strathclyde Universities and College Union (SUCU) as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Research Staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with SUCU.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member of staff's letter of appointment and any accompanying papers.

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at www.strath.ac.uk/publicinterestdisclosure. Other relevant policies, e.g. Fraud Prevention and Conflicts of Interests, can also be found on the University's website.

Any member of staff may at any time be exposed to commercially sensitive information, information related to potentially valuable intellectual property or information which may otherwise be of a confidential nature. This information, which could be found anywhere in the University, may be written or disclosed orally, can include information of a commercial or technical nature, and may be owned by the University or by third parties. The University requires all employees to keep any such information confidential in the first instance and not disclose, publish or otherwise disseminate it without prior consent of the University. Such confidentiality obligations are commonplace and in the commercial interests of the University. When in doubt advice should always be sought from Research and Knowledge Exchange Services prior to disclosure.

The University operates probationary periods for new staff, the duration of which will be specified in individual letters of appointment. The normal probation period for posts in this staff category is 9 months for those at grades 6 and 7, and 12 months for grades 8 and above. Further guidance on probationary procedures is published at <http://www.strath.ac.uk/staff/policies/hr/>.

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Further information on the terms and conditions specified in this document and other staffing policies and procedures can also be found at www.strath.ac.uk/hr.

2. SALARY

Appointments are made at an appropriate salary point on the University's grading structure, with initial placing determined according to qualifications and experience. Increments are paid to staff on the 12 month anniversary of their appointment. Where this is not the first of the month, the increment will be paid on the first of the month directly

after the 12 month anniversary. This allows 1 progression to the next point on the salary scale until the top guaranteed point of the scale is reached.

Salaries are paid directly to staff members nominated bank account, normally on the second last working day of the month.

3. HOURS OF WORK

Working time is that required to fulfil the duties of the post. The University Court recognises that research staff carry out these duties in a variety of ways appropriate to the nature of the research activity, but expects regular contact to take place between the research staff employee and the supervisor/granholder (where these positions are occupied by different individuals) during normal working hours on week days. There are exceptions to this pattern which may involve contact at other locations or in the evenings, or at weekends, but these arrangement will be made with the agreement of the member of staff concerned.

Duties may, by arrangement with Head of Department/School/Director, include some teaching associated with the post (up to a maximum of 40 hours per semester) for which no additional payment will be made.

Additional work which does not fall within the scope of that described above may by arrangement attract payment which must be authorised and processed through the payroll.

4. HOLIDAYS

Annual leave entitlement is 31 days per year to be taken by agreement with the line manager. For staff members working on a part-time basis, holidays will be calculated on a pro-rata basis.

In addition to annual leave there is an entitlement to eleven public holidays per year which should be taken on days that the University is closed for this purpose. The University presently closes for four additional days over the Christmas and New Year period. **These additional days count against the annual leave entitlement.**

For staff members working on a part-time basis, public holiday entitlement will be calculated on a pro-rata basis.

Annual leave and public holiday entitlements should be taken in the leave year to which they relate. Up to five days leave can be carried forward into the new leave year subject to line management agreement. In exceptional circumstances, Heads of Department/School/Director may approve carry forward of accrued annual leave in excess of five days.

The University's expectation is that staff take all accrued holidays prior to their termination date. If staff have exceeded their entitlement the University will deduct an equivalent number of days pay from final salary payments.

5. SICKNESS ABSENCE

During any period of absence through illness or injury provided the appropriate notification and certification procedures have been followed the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

Period of Continuous Employment at start of absence from work	Full Pay	Half Pay
Less than 1 year	1 month	1 month
1 year but less than 2 years	2 months	2 months
2 years but less than 3 years	4 months	4 months
3 years but less than 5 years	5 months	5 months
5 years or more	6 months	6 months

In order to manage the University's sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Work and Pensions. For full details on the general University policy in this area please refer to the Sickness Absence Management Policy at www.strath.ac.uk/staff/policies/hr.

6. PENSIONS

If you are under age 75 at the date your appointment commences you will automatically become a member of the pension scheme operated by the University — the Universities Superannuation Scheme (USS). You will be admitted to the career revalued benefits scheme called the USS Retirement Income Builder; the contribution rate that currently applies is 9.8% of pensionable salary. A threshold applies to the maximum salary that counts towards the USS Retirement Income Builder. The current threshold from 1 April 2022 is £40,000 per year. Contributions based on salary above the monthly equivalent rate of the threshold are paid to the defined contribution section of the scheme called the USS Investment Builder. Please use the following link to access information, including the USS Member Guide: <https://www.uss.co.uk/for-members/youre-a-new-joiner>. The scheme booklet is called 'Your Guide to the Universities Superannuation Scheme'.

The University operates a salary exchange arrangement, Pensions Plus, for members of the USS. Pensions Plus enables pension contributions to be made in a manner so that both employees and the University can benefit from available National Insurance Contribution savings. You will be automatically included in Pensions Plus, provided it does not adversely affect your take-home pay or your ability to claim certain state benefits. If your earnings fall below the Pension Plus pay protection limit you will be opted out of Pension Plus. This will not affect your membership of the USS.

New members of staff may opt out of USS within three months of taking up appointment and will then be treated as if they had never been a member of the scheme. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days' notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section, Finance, in the first instance (pensions@strath.ac.uk). Please note that if you are a member of Pensions Plus and withdraw from USS with less than two years of membership, or cease employment with the University and have less than two years of USS membership, the option of a refund of pension contributions will not be available to you. Instead, USS must provide you with a pension benefit that is payable from your Normal Pension Age. Regardless of whether you participate in Pensions Plus, if you are a member of the pension scheme for two years or more you are not entitled to a refund of pension contributions on leaving the scheme, you will be entitled to a pension benefit.

The University reserves the right to alter or withdraw Pensions Plus as it sees fit or as required to comply with legislative changes. Withdrawal or amendment of Pensions Plus will not affect your membership of USS. If you do not wish to participate in Pensions Plus but wish to remain in

the pension scheme please contact the Pensions Team who will provide you with a non-participation form.

Information regarding pension scheme membership can be found on the Pensions pages of the University's website. Full information regarding USS can be found on the USS website – www.uss.co.uk

7. PLACE OF WORK AND RESIDENCE

Members of staff will be based on the John Anderson Campus, unless otherwise stated in the letter of appointment. The Department/School in which the post is initially placed will be specified in the letter of appointment although there will be an expectation to work at such other places as required in the course of employment.

If the need arises for members of staff to work outside the UK for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

The University does not normally place specific restrictions upon the place of residence of members of staff. All staff are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment.

8. CONSULTANCY/FURTHER ACTIVITIES

To support the strategic objectives of the University and to facilitate individual professional development, the University encourages staff to engage in professional activities with outside bodies related to their field of work. In many cases, such activity will be approved on the basis that it represents University knowledge exchange activity and should therefore be treated as part of the individual's overall workload and managed through the University's systems. It is also recognised that there will be some cases where an activity is entirely separate from the University and should thus be notified/approved as a personal business activity. For further information please refer to the "University Procedure in relation to Work for Outside Bodies including Consultancies", which forms part of the employment contract and can be accessed at www.strath.ac.uk/hr.

9. DISCIPLINARY AND GRIEVANCE PROCEDURES

Further information on the University's disciplinary and grievance procedure can also be found at www.strath.ac.uk/policies/hr or on request from Human Resources.

10. NOTICE AND TERMINATION

Members of staff are employed on the conditions indicated in individual letters of appointment and any accompanying papers. The University is not obliged to give notice of termination or continue any employment beyond the end of that period. Where the period of the contract of employment is for one year or less it may be terminated short of the fixed term period by one months notice on either side. Where the period of the contract of employment is for more than one year, or where there have been a further contract or series of contracts immediately consecutive, the employment may be terminated short of the fixed term period by three months' notice on either side, except during the probationary period when the notice period is one month.

If the appointment is for a fixed term it will expire at the end of the period without the necessity for notice.

Revised April 2022