

Digital Manufacturing Process Design Support

Department	Strathclyde Institute of Pharmacy and Biomedical Sciences (www.strath.ac.uk/sipbs/)		
Faculty	Faculty of Science (www.strath.ac.uk/science/)		
Staff Category	Technical Services	Reference No	101547
Reports To	Senior Research Fellow	Grade:	7
Salary Range:	£31,604 - £38,833	Contract Type:	Fixed Term (12 months)
FTE:	1 (35 hours/week)	Closing Date	Wednesday, 14 March 2018

Job Advert

Applications are invited for a highly motivated, enthusiastic candidate to join the Future Manufacturing Research Hub in Continuous Manufacturing and Advanced Crystallisation (CMAC; www.cmac.ac.uk) at the University of Strathclyde. CMAC is a large dynamic Centre located across 7 UK universities with the physical hub located at the University of Strathclyde. The post holder will have a background in chemical engineering, mathematics, computer science, software engineering or other related discipline. Work based experience of modelling packages and process control programming related to pharmaceutical unit operations and/or pharmaceuticals would be advantageous.

You will be a capable programmer/modeller with the ability to implement existing models from literature and partners in a range of platforms, develop interfaces between process equipment and IT infrastructure and support related programming/computational activities. You will also aid in the development of new models from fundamentals or data driven sources. The successful candidate will contribute significantly to the development of a modelling platform and control infrastructure for pharmaceutical applications. Additionally, you will utilise experimental research from a range of sources for development of predictive digital design capabilities.

You will have excellent written and verbal skills with the ability to demonstrate prioritisation and scheduling of your own workload. Candidates must have strong problem solving abilities, demonstrating innovation and creativity in dealing with challenges.

Job Description

Brief Outline of Job:

To provide support for the CMAC Future Manufacturing Research Hub. You will work within a larger team to develop a platform for the predictive modelling and control of pharmaceutical processes. You will code and implement models from literature and research partners into a range of programming platforms. You will contribute to the development of modelling packages in order to generate a predictive digital twin of the relevant unit operations and material transformations. This will include the processing of experimental data from a range of sources into a suitable input format. You will report to the project technical lead and liaise with program partners (both academic and industrial) to execute the given research programs. This is initially a 12 month post with potential to extend within the 7 year program.

Main Activities/Responsibilities:

- I. As part of the collaborative R&D projects within the Future Manufacturing Research Hub, develop specific objectives to ensure progress against the aims of the projects. Develop a platform for the predictive modelling and control of

	pharmaceutical processes.
2.	Work with the PI, Senior Research Fellow and others members of the research team and report activities and progress on a regular basis.
3.	Plan and manage own workload, with guidance from colleagues as required.
4.	Support research, specifically through coding of modelling packages in order to generate a predictive digital twin of the relevant unit operations and material transformations.
5.	Write up work, individually or in collaboration with colleagues, and disseminate results within the project team.
6.	Join external networks to share information and ideas, inform the development of models and technical solutions for use by the research team.
7.	Collaborate with colleagues to ensure that modelling packages developed are fit for purpose to inform the Future Manufacturing Research Hub research and training effort.
8.	Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish links with other academic or industry research groups.
9.	Develop detailed knowledge of processing and analytical methodologies in support of the project aims.

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 HND level qualification in a relevant discipline plus work based experience in a similar role or equivalent in (chemical engineering, mathematics, computer science, software engineering)
- D1 Degree level qualification in a relevant discipline (chemical engineering, mathematics, computer science, software engineering)

Experience

- E2 Experience in general programming
- E3 Experience in one or more of the following platforms: Aspen custom modeller, gProms, MATLAB, python, LabView, PharmaMV, Comsol multiphysics, Ansys Fluent

Job Related Skills and Achievements

- D2 Knowledge and experience pharmaceutical processes
- D3 Experience of developing and implanting process models
- D4 Experience of the deployment of models for use by others

Personal Attributes

- E4 Excellent written and oral communication skills
- E5 Demonstrable evidence of ability in presentation of outputs
- E6 Highly focussed on core objective and target driven with the ability to work to tight deadlines and demonstrate prioritisation of work load
- E7 Able to understand and interpret queries from a broad range of sources including researchers, staff and external collaborators
- E8 Proactive and able to use initiative

Other Relevant Factors

- E9 Ability to immediately start and provide independent experimental support with minimal supervision

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview 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 Dr John Robertson, Senior Research Fellow.

Conditions of Employment

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

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 in April 2018.

Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.



Conditions of Employment

Technical Services Staff Grades 6 to 8



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 UNITE as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Technical Services staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with UNITE.

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. Members of staff may not accept outside paid work including personal consultancies without the permission of the University, which will not be unreasonably withheld.

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 grades 6 and 7 and 12 months for grade 8. Further guidance on probationary procedures is published at <http://www.strath.ac.uk/staff/policies/hr/>.

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 1 August each year, when the employee has a minimum of 6 full months of service at the appointed grade, allowing progression to the next point on the salary scale until the top guaranteed point of the scale is reached.

Arrangements in relation to overtime, additional hours, non-standards and on-call working are published at www.strath.ac.uk/staff/policies/hr

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

3. HOURS OF WORK

The normal working week is 35 hours. Unless otherwise indicated in an individual's letter of appointment, the normal hours are 9.00am to 5.00pm Monday to Friday with a one hour lunch break. Certain members of staff may be required to work some hours outwith this normal pattern and this should be agreed locally. Nonetheless, operational requirements vary significantly across the University and therefore, where local circumstances dictate, reasonable variation may be adopted dependant upon operational needs. In such situations your Head of Department/School/equivalent will discuss with you the alternative arrangements that will apply

Overtime rates do not apply to staff grades 6 and above. Where a Head of Department/School/equivalent requests additional work, above the standard working week to meet the particular requirements of the Department, equivalent time off in lieu may be granted by prior agreement.

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/equivalent 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

New members of staff, aged under 75, will be admitted automatically to membership of the Universities Superannuation Scheme (USS) on taking up appointment. If you are already in receipt of a USS pension you will join USS in accordance with pension auto-enrolment regulations. USS requires a contribution from the member, currently 8 per cent of pensionable salary. A contribution, currently 18 per cent of pensionable salary, is paid by the University. From 1 April 2016 all members are part of the career revalued benefits scheme called the USS Retirement Income Builder. From 1 October 2016 a threshold, initially of £55,000 a year, will apply to the maximum salary that counts towards the USS Retirement Income Builder. From the same date a new defined contribution section of the scheme called USS Investment Builder will open and any contributions above the threshold will be invested in this section. The exception to automatic membership of the pension scheme applies if your post is located out with the UK in an EU member state. If this is the case membership of USS is not available to you.

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 retirement date.

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. 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.

9. NOTICE AND TERMINATION

The employment of a member of staff is terminable by at least 3 months' notice, in writing, on either side, except during the probationary period when notice is one month. If notice is being given by a member of staff earlier release may be granted if this can be arranged without detriment to the work of the department or area. If the appointment is for a fixed term period it will expire at the end of the period without the necessity for notice. Fixed term contracts may be terminated by either party short of the expiry date by the serving of one month's notice in writing. The University is not obliged to continue a fixed term appointment beyond the specified employment period.

Revised November 2017