

# X-ray PDF Applications Scientist (KTP Associate)

Department	Strathclyde Institute of Pharmacy and Biomedical Sciences ( <a href="http://www.strath.ac.uk/science/strathclydeinstituteofpharmacybiomedicalsciences/">www.strath.ac.uk/science/strathclydeinstituteofpharmacybiomedicalsciences/</a> )		
Faculty	Faculty of Science ( <a href="http://www.strath.ac.uk/science/">www.strath.ac.uk/science/</a> )		
Staff Category	KTP	Reference No	23381
Reports To	Alastair Florence (Academic Supervisor) Helen Blade (Company Supervisor)	Grade:	RS79
Salary Range:	£33,000 - £34,000	Contract Type:	Fixed Term (24 months)
FTE	1 (36.5 hours/week)	Closing Date	19/12/2021

## Job Advert

The Continuous Manufacturing and Advanced Crystallisation (CMAC, [www.cmac.ac.uk](http://www.cmac.ac.uk)) hub at the University of Strathclyde in partnership with AstraZeneca is seeking to appoint a Knowledge Transfer Partnership (KTP) Associate in the area of X-ray Pair Distribution Function (PDF) analysis. In particular, the role is focussed on the application of PDF to AstraZeneca materials and the focus of the role is on developing approaches for routine sample preparation, laboratory and synchrotron data collection, PDF analysis, reporting and development of training material to enable and support users to implement successfully this powerful analytical method.

AstraZeneca is a leading global biopharmaceutical company with a passion for science (<https://www.astrazeneca.com>). This includes the application of leading edge analytical methods within development projects to characterise materials. This position will be based in AstraZeneca's Pharmaceutical Research & Development function in Macclesfield.

The post is on a fixed term basis for a period of 24 months with a proposed start date of February 2022. The project is part of the Knowledge Transfer Partnership (KTP) programme that aims to help businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. Successful Knowledge Transfer Partnership projects are funded by UK Research and Innovation through Innovate UK and are part of the government's Industrial Strategy. To find out how KTP works and the vital role you will play if you successfully secure a KTP Associate position please visit: [www.ktpws.org.uk](http://www.ktpws.org.uk)

You will have a PhD in a chemistry, materials science, physics, pharmaceutical science or a related discipline with appropriate experience in a collaborative research environment with knowledge in the area of pharmaceutical materials, X-ray scattering, data analysis and solid form characterisation. Practical experience of working with amorphous materials and in the use of laboratory X-ray and/or synchrotron sources and in the analysis and interpretation of data will be advantageous.

You must have excellent verbal and written communications skills with the ability to write clearly and succinctly. You must also be able to work as a member of a team, as well as demonstrate successful track record of research achievement. You should be able to independently develop new concepts in your research, have excellent organisational skills, initiative, and the ability to pay close attention to details. In addition to the KTP core development training, you will have a dedicated training budget of £4,000 to further support your career development. Location of this role, the Associate will be expected to work mostly at AstraZeneca's Research & Development Campus in Macclesfield, however will be required to work at the University of Strathclyde for a period of time.

## Job Description

### Brief Outline of Job:

Supported by the team at the University of Strathclyde and AstraZeneca, the KTP Associate will apply Pair-Wise Distribution Function (PDF) analysis to characterise pharmaceutical systems exhibiting low levels of order in the solid state in this Knowledge Transfer Partnership (KTP) project between CMAC at the University of Strathclyde and the global biopharmaceutical company, AstraZeneca (Macclesfield). A key goal is to develop workflows for PDF data collection and analysis using existing software tools, to include tools to enable data comparison and support adoption of the technique.

To achieve this the Associate will be expected to work mostly at AstraZeneca's Research & Development Campus in Macclesfield, however will be required to work at the University of Strathclyde for a period of time. The project will involve working on systems currently in active development.

### Main Activities/Responsibilities:

1.	To provide PDF expertise to the Knowledge Transfer Partnership (KTP) project between CMAC at the University of Strathclyde and AstraZeneca (Macclesfield).
2.	Under the direction of Professor Alastair Florence (University of Strathclyde, SIPBS/CMAC) and Prof Blair Johnston (University of Strathclyde, SIPBS/CMAC) and Dr Helen Blade (Astra Zeneca, Macclesfield), the KTP Associate will apply PDF methods to fingerprint and characterise amorphous pharmaceutical systems. This will include sample preparation, data acquisition, cleansing and analysis and preparation of reports.
3.	Provide common end-users across AstraZeneca with demonstrations and workshops on the final methods and workflow through online seminars, training activities, company newsletters and other routes
4.	Document and share all data, reports, methodologies and KTP outputs with the company through SOP's, interactive video tutorials and other appropriate means.
5.	Liaise with potential users across AstraZeneca's Pharmaceutical Research & Development team, in CMAC's National Facility team, synchrotron facilities and software providers as required to develop, test and disseminate effective PDF measurement applications.
6.	Regularly report findings to AstraZeneca to ensure that project outputs inform the organisational goals.
7.	Deliver a range of training to the AstraZeneca's Pharmaceutical Research & Development team, exploiting a combination of office-based training, workshops, seminars and where suitable, lab sessions
8.	Regularly interact with AstraZeneca stakeholders to facilitate both embedding of underpinning PDF analysis knowledge and application/translation of this knowledge to suitable industrial workflows.
9.	Completion of all KTP training and the KTP Associate Final Report by the required deadline.

## 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 1st Degree in a relevant subject (chemistry, physics, materials sciences or related discipline)

E2 PhD or equivalent industrial experience in a relevant subject area

### Experience

E3 A knowledge of pharmaceutical molecular solids and how differences in solid state structure can impact on product performance

### Job Related Skills and Achievements

E4 Experience of laboratory and/or synchrotron X-ray instrumentation and measurements. Previous knowledge and experience of PDF methods would be preferable however training will be provided where required

E5 Knowledge of one or more of the following software platforms for data analysis (MatLab, XPDFSuite, GudRunX, Polysnap), modelling (PCA, PLS, R, Python, SciKit Learn, molecular dynamics, EPSR), structural informatics (e.g. databases, pattern matching, CSD search and analysis tools, PIXEL)

E6 Experience of developing, implementing and applying measurement, analysis and modelling methods for material understanding and/or control

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E7 Knowledge and experience of pharmaceutical crystalline and amorphous materials and industrial context

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#### **Personal Attributes**

E8 Excellent communication, presentation and organisational skills

E9 Demonstrable evidence of ability in presentation of outputs

E10 Highly focussed on core objectives and target driven with the ability to work to tight deadlines and demonstrate prioritisation of work load

E11 Able to understand and interpret queries from a broad range of sources including researchers, staff and external collaborators

E12 Proactive, able to use initiative and enthusiastic

E13 Awareness of the broader Commercial Drivers for the adoption of digitalization tools, such as mechanistic models to aid in digital design and operation

#### **Other Relevant Factors**

D1 Postdoctoral experience would be beneficial for the role

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## **Application Procedure**

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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**

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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 Prof Alastair Florence, ([alastair.florence@strath.ac.uk](mailto:alastair.florence@strath.ac.uk)).

### **Conditions of Employment**

Conditions of employment relating to the KTP 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 6 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 virtually on 13/01/2022.

### **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 gender equality in academia across all academic disciplines and professional and support functions.

## 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

## KTP Associates



### 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, Privy Council.

The University Court recognises the Strathclyde University and Colleges 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.

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 6 months. 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/](http://www.strath.ac.uk/hr/).

Further information on the terms and conditions specified in this document is contained in the Staff Handbook, which also includes further details of such conditions as provision for sick/injury leave and pay, leave of absence, holidays and holiday pay, individual grievance procedures, review and disciplinary procedures and collective agreements. Should you not receive a copy of the handbook on appointment a reference copy is accessible by visiting Human Resources.

### 2. CONTINUOUS SERVICE

In the case of new appointments, unless otherwise stated in the letter of appointment, the date of continuous employment for the purposes of statutory employment rights will be taken to be the date of appointment contained therein. In the case of promotions, regradings or transfers, previous service is continuous.

### 3. ALLOCATION OF POST

The post to which each member of staff is appointed is allocated to both the University Department and/or other area(s), and the Company Partner named in the member's letter of appointment and any accompanying papers. Should the University Court and/or the Company Partner deem it necessary, in the furtherance of the objectives of the University (specified in its Charter) and/ or the objectives of the Company Partner, they shall, having consulted with the parties concerned and having received the advice of the Senate, re-allocate the post and/or the duties pertaining partially or wholly to it to another University department or area and/or to another Company Partner Department or to an associated Company. Any such re-allocation will be without prejudice to the other conditions of employment of the holder.

If the need arises during the course of employment for members of staff to work outside the U.K. 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.

### 4. RESPONSIBILITY AND SERVICE

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 <http://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.

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

### 5. WORKING TIME

Working time is that required to fulfil the duties of the post and members of staff are expected to comply with the general working pattern of the KTP Company Partner. Further details in relation to working hours will be provided within the offer of employment and/or by the Company Partner on commencement of employment.

### 6. HOLIDAYS

Entitlement to accrue paid annual holiday will apply from the date of commencement and the accrual rate will be as per the provisions of the KTP Company Partner. Public Holidays will only apply where they are observed by Company Partner and it may be that these have to be taken from the annual leave entitlement where the Company does not apply a separate entitlement in this regard. Where Public Holidays are not observed by the Company Partner, these days may still be taken from the annual holiday entitlement, subject to authorisation. In cases where the Company Partner operates a period of annual closedown, these days may count against the accrued annual holiday entitlement, subject to the normal practices of the Company Partner. Further details and arrangements for requesting leave will be confirmed within the Offer of Employment and/or by the Company Partner on commencement of employment.

### 7. SICK LEAVE

During any period of absence through illness or injury provided the appropriate medical certificates are received 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 Health and Social Security. For this and other details see staff handbook.

### 8. SALARY AND SUPERANNUATION

Salaries are payable monthly by means of a credit transfer to a specified bank account.

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 2021 is £59,883.65 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. Information regarding USS can be found in the scheme booklet located on the website: [https://www.uss.co.uk/-/media/Project/USSMainSite/Files/For\\_members/Guides/Your\\_guide\\_to\\_Universities\\_Superannuation\\_Scheme.pdf](https://www.uss.co.uk/-/media/Project/USSMainSite/Files/For_members/Guides/Your_guide_to_Universities_Superannuation_Scheme.pdf). 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](mailto: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](http://www.uss.co.uk)

without detriment to the work of the department or area. If the appointment is for a fixed term 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 months' notice in writing. The University is not obliged to continue a fixed term appointment beyond the employment period.

Revised April 2021

## **9. PLACE OF RESIDENCE**

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

## **10. PERIOD OF EMPLOYMENT**

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 the fixed term 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 1 month's 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 3 months' notice on either side, except during the probationary period when the notice period is one month.

## **11. NOTICE AND TERMINATION**

The employment of a member of staff is terminable by at least three months' notice in writing, on either side; except during probationary period when the notice period is one month. If notice is being given by a member of staff earlier release may be granted if this can be arranged