

Research Associate in Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS)

Department	Strathclyde Institute of Pharmacy and Biomedical Sciences (www.strath.ac.uk/sipbs/)		
Faculty	Faculty of Science (www.strath.ac.uk/science/)		
Staff Category	Research	Reference No	I53663
Reports To	CMAC Director	Grade:	7
Salary Range:	£31604 - £38833	Contract Type:	Fixed Term (3 years)
FTE:	1 FTE	Closing Date	Sunday, 2 December 2018

Job Advert

Background to EPSRC Future CMAC Research Hub and NiCE-MSI

The Continuous Manufacturing and Advanced Crystallisation (CMAC) Future Manufacturing Research Hub (www.cmac.ac.uk) is a national research centre led by the University of Strathclyde. It comprises a large, multidisciplinary team of academics and researchers located across seven leading UK Universities. The Hub provides a platform for collaborative research, training and knowledge exchange in the area of advanced pharmaceutical manufacturing and crystallisation. The Hub has a large and vibrant research programme with key Industry partners GSK, AstraZeneca, Bayer, Novartis, Roche, Lilly, Takeda and a broad range of technology companies and SMEs.

The Hub is located within a suite of dedicated labs within the University's £89M Technology Innovation Centre housing a comprehensive suite of state-of-the-art processing, analysis and characterisation capabilities. The £15M investment in world-class instrumentation has been supported through awards from EPSRC, the Wolfson Foundation as well as HEFCE/SFC via a major £11.4M UK-RPIF award. A key investment has been to install a new Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS) instrument to expand our pharmaceutical materials research within CMAC.

The UK's National Centre of Excellence in Mass Spectrometry Imaging ([NiCE-MSI](#)) at the National Physical Laboratory (Teddington) is a world-leading centre for fundamentals of techniques and advance measurement capability, metrology for reliability and standardisation and supporting the uptake of the techniques in industry and academia. NiCE-MSI is leading the \$20M Cancer Research UK Grand Challenge project to build a "[Google Earth](#)" of Cancer. We have one of the most powerful assembly of mass spectrometry imaging techniques worldwide covering the nanoscale to microscale and from elements to proteins.

This role is jointly funded by CMAC and NPL. We seek to appoint a highly motivated, enthusiastic post-doctoral research associate to join the CMAC and NiCE-MSI teams. The role will be based at CMAC and will contribute to research activities in their ToF-SIMS facility. This will involve working with CMAC and NPL researchers and academics as well as supporting collaborations with external academic and industrial partners. The role will contribute to technical and application development of ToF-SIMS to increase impact in medicines manufacturing and the NPL Scotland region. This will include establishing quality procedures and protocols for sample preparation, data collection and analysis. Support for collaborative research projects as well as provision of training for PhD students and other staff members would be key. Whilst the main focus is on supporting the application of ToF-SIMS to a range of pharmaceutical materials science projects, there will also be opportunities to gain experience of relevant preparation and related surface analysis techniques housed in CMAC and NiCE-MSI.

The successful candidate will be appointed at Grade 7, having a PhD in a relevant physical, materials science, analytical or related domain. Experience of ToF-SIMS would be advantageous however training will be provided as necessary by NiCE-MSI. Experience of mass spectroscopy and related surface analytical techniques would be desirable. Good project management skills and experience of effectively managing multiple timelines would be an advantage as would strong oral and written communication skills. A creative drive and flexibility to work accurately in a fast-paced, multi-project environment are essential. The role requires strong problem solving abilities, ability to develop and apply innovative approaches to address the research and measurement challenges associated with application of ToF-SIMS in a range of research projects.

Job Description

Brief Outline of Job:

To carry out high quality surface analysis of pharmaceutical materials and related samples using ToF-SIMS, leading or contributing to peer reviewed publication and research proposals. To maximise the impact of the ToF-SIMS capability for medicines manufacturing and the goals of NPL Scotland to support the region. Advise users on the feasibility of experiments and perform sample preparation, experimental design of measurements and carry out data analysis and reporting for ToF-SIMS studies. Act as lead researcher for the instrument and provide support for research and research services to cater for local and external partners as required. Train users and support existing PhD students and deliver technical assistance as appropriate. Establish operating procedures and additional capabilities for the technique, making recommendations to Hub Director and NiCE-MSI on areas for development or further investment to enhance capability.

This post is an exciting opportunity to join leading multidisciplinary teams and make a significant contribution to grow a world-class science programme which will impact on advanced measurement in pharmaceutical materials, continuous process design and formulation of medicines.

Main Activities/Responsibilities:

1.	Deliver and support high quality collaborative research exploiting ToF-SIMS in CMAC and with other partners. Establish systematic procedures to allow robust and reliable sample preparation, measurement and data analysis.
2.	Contribute and support to the preparation of research funding applications to exploit or develop ToF-SIMS or related surface measurements in pharmaceutical measurement, materials and manufacturing research.
2.	Support a ToF-SIMS measurement service within CMAC for a range of non-expert users and other internal and external users.
3.	Monitor equipment performance, ensuring that calibration standards and specifications are maintained – including training users where required, and liaise with external equipment vendors to facilitate planned maintenance and repairs.
3.	Contribute to the development and delivery of CMAC programmes, with national and international impact, disseminating results through regular and sustained publications in high impact journals, books and conference proceedings.
4.	Produce high quality training materials and case studies to promote the application of ToF-SIMS in advanced pharmaceutical manufacturing and materials research to potential new users.
5.	Provide PhD and project student supervision, taking an active role in driving forward research objectives.
6.	Liaise directly with internal and external collaborators and provide experimental results, technical project support, feedback and suitable reports including compliance with relevant data management policies.
7.	Plan and manage own work effectively, taking into consideration low priority tasks vs strategic projects.
8.	Support the implementation of robust laboratory practices, local rules and adherence to the University's Occupational Health and Wellbeing Policies.
9.	Engage in continuous professional development.

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 Degree level qualification in a relevant discipline (e.g. chemistry or physics)

E2	PhD in a relevant physical or materials science, manufacturing or related domain (or equivalent professional experience in an appropriate discipline)
D1	Membership of relevant Chartered/professional bodies
Experience	
E3	Excellent knowledge and appropriate experience in analytical science, chemical and physical analytical methods for pharmaceutical materials or other relevant areas.
D2	Good track record of published research in high quality publications.
D3	Practical and theoretical experience of the ToF-SIMS, mass spectroscopy or related techniques
E4	Relevant working experience in a research facility at graduate level or above
D4	Experience in scientific equipment installation, commissioning or routine maintenance
D5	Experience of working within a multidisciplinary environment
Job Related Skills and Achievements	
E5	Knowledge and skills gained from previous responsibility of managing scientific instrumentation
E6	Excellent interpersonal and communication skills combined with a creative drive and flexibility to work in a high-paced and evolving environment.
E7	Ability to interact with a range of stakeholders from industry and academia.
E8	Good project management skills and experience of managing multiple timelines.
D6	Knowledge of ToF-SIMS or related techniques
Personal Attributes	
E9	Excellent written and oral communication skills
E10	Ability to work to tight deadlines and effective prioritisation of work load
E11	Demonstrable evidence of ability in presentation of scientific results
E12	Ability to deal with challenging research problems presented by local colleagues and external collaborators and work independently or as part of a team.

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/workforum>).

Informal enquiries about the post can be directed to Professor Alastair Florence, CMAC Hub Director (alastair.florence@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Research 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 Local Government Pension Scheme (LGPS) in Scotland. 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.

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.

