



Job title	Materials Characterisation Research Technician	Job family and level	TS Level 4
School/ Department	Nanoscale and Microscale Research Centre (nmRC)	Location	Nanoscale and Microscale Research Centre (nmRC), Cripps South Building, University Park, Nottingham University, NG7 2RD

Purpose of role

The primary purpose of the role is to be responsible for the provision of technical, experimental and specialist support to the teaching and research activity in the area of X-ray Photoelectron Spectroscopy (XPS) within the nmRC. The role holder will be responsible for training researchers in the use of XPS instrumentation and managing the day-to-day operations of the XPS laboratory. Specialist expertise and experience in the use of XPS and data interpretation are essential to produce research outputs of the highest quality. The nmRC also hosts complementary materials characterisation techniques, such as electron microscopy, Raman spectroscopy and time-of-flight secondary ion mass spectrometry, and, in agreement with line management, there is scope within this role to develop expertise beyond XPS to other techniques within the nmRC.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	<p>Specialist technical training and advice in XPS</p> <ul style="list-style-type: none"> Responsible for training and supervision of researchers in XPS techniques. Developing and optimising experimental procedures for different materials and structures. Contributing to data interpretation, advice on best peak-fitting routines and assisting in the development of research. To be a recognised source of XPS technical and experimental expertise and to identify and interpret the needs of instrument users. Maintaining and updating safe operating protocols and instrument operating guides for instrument users. Routine preparation of a variety of sample materials and developing new preparation methods for novel materials. To provide technical advice in the support of grant applications and contributing to research publications. 	40%

2	<p>Specialist technical support work and management of XPS Laboratory</p> <ul style="list-style-type: none"> • Routine maintenance of XPS instrumentation and coordinating services, breakdown repairs and upgrades with manufacturers to minimise instrument downtime as much as possible. • To conduct routine instrument performance and calibration checks, to monitor and maintain spectrometer performance and calibration for optimal data quality control. • Responsible for the operation of instrumentation in different modes of operation, such as ion beam etching, angle resolved XPS and using different anode configurations. • Managing data outputs from instruments. • Day-to-day laboratory management - managing laboratory space to ensure a safe, tidy, and organised working environment. • Managing the instrument booking system, instrument access and managing the expectations of users. • Maintaining stocks of consumables, and reordering as necessary, and maintaining gas supplies to the laboratory. 	35%
3	<p>Health and Safety</p> <ul style="list-style-type: none"> • Participation in monthly safety audits and ensuring the laboratory complies with all necessary health and safety standards, including adherence to COSHH legislation. • Maintaining a safe working environment for all users of the XPS facility and maintaining safety records/risk assessments etc. To keep up-to-date with regulations and work closely with the nmRC Health and Safety Assistant and Coordinator. • Ensuring appropriate disposal of sample materials. 	10%
4	<p>Materials characterisation and detailed analysis work for others</p> <ul style="list-style-type: none"> • Conduct analytical work and XPS measurements for commercial companies and University staff on a variety of sample materials. • Contribute to the interpretation of XPS data and analytical results based on specialist technical skills. • Provide high quality experimental data in a timely manner . 	10%
5	Any other duties commensurate with the level of the role.	5%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> • High technical and practical competency using XPS instruments and related sample preparation. • Proven analytical and technical problem solving skills. • Excellent oral and written communication skills, to enable the identification and understanding of staff/student requirements. • Ability to adopt a methodical approach to prioritising and organising work in order to achieve deadlines. • Ability to build effective working relationships and collaborate with others, both internally and externally. • Ability to interpret XPS data and use data processing software for curve fitting and data reduction techniques. • Excellent laboratory management skills 	<ul style="list-style-type: none"> • Basic budgetary management skills.
Knowledge and experience	<ul style="list-style-type: none"> • Proven ability to work accurately and effectively under pressure to provide quality technical support. • Knowledge and experience in the preparation and characterisation of a wide range of sample types by XPS. • A sound understanding of health and safety regulations (and implementation) and the implications of non-compliance in a laboratory context. • Experience of managing a laboratory facility and advanced instrumentation. • Experience of operating XPS instrumentation, including the use of different operational modes. • Experience providing technical support and training to researchers in the operation of instrumentation. 	<ul style="list-style-type: none"> • Experienced user of different manufacturers XPS systems. • Ability to understand, conceptualise and interpret the technical and/or experimental requirements of staff and students. • Ability to identify and manage risks to enable effective project delivery. • Experience of other complementary spectroscopy and structural analytical techniques.

<p>Qualifications, certification and training (relevant to role)</p>	<ul style="list-style-type: none"> • Minimum HNC or equivalent, plus substantial work experience in a relevant technical or scientific role <p>or</p> <ul style="list-style-type: none"> • Proven track record with extensive work experience in a relevant technical or scientific role. 	<ul style="list-style-type: none"> • Additional qualifications in a relevant area and/or laboratory skills e.g., health and safety. BSc/MSc or equivalent in scientific or engineering discipline. • Additional qualifications in laboratory skills e.g. health and safety.
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The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

This is a Smart Art diagram. Click on the boxes to enter the role holder's job title, line manager's job title and any direct reports (if applicable). If a role does not have any direct reports, remove this box by double clicking on it and pressing Delete.

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