THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

Faculty Office Science & Engineering

FSE TECHNICAL SERVICES

TECHNICAL SPECIALIST (AMES)

VACANCY REF: SAE-029465

Salary:	£37,694 - £46,049 per annum depending on relevant experience
Hours:	1 FTE
Duration:	Permanent
Location:	University of Manchester – Oxford Road
Hybrid Working:	Given the in-person requirements of this role, hybrid working is not feasible

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Enquiries about the vacancy, shortlisting and interviews:
Name: Prof Richard Curry (Vice-Dean for Research and Innovation) OR Maddison Coke (Senior Technical Specialist (PNAME) Henry Royce & Photon Science Institutes)

Email: Richard.curry@manchester.ac.uk or maddison.coke@manches-ter.ac.uk

Overall Purpose of the Job

The University of Manchester (www.manchester.ac.uk) is one of the largest single-site universities in the UK, with one of the biggest student communities. In total, 25 Nobel Prize winners have worked or studied here and 93% of our research was ranked as 'world-leading' or 'internationally excellent' by the Research Excellence Framework in 2021. Furthermore more than nine out of ten of our recent graduates go straight into employment or continued studies. The Faculty of Science and Engineering (FSE) comprises two multi-discipline Schools; the School of Engineering and the School of Natural Sciences, each led by a Head of School and Head of School Operations. The School of Engineering is made up of five academic departments and the School of Natural Sciences is made up of five academic departments. For more information please visit https://www.se.manchester.ac.uk/.

We are seeking an enthusiastic and proactive Technical Specialist to join our dynamic technical operations team, which strives to provide a sector leading technical support for FSE and the wider

University. With a commitment to customer service excellence and a passion for science and engineering, Technical Specialist will provide an agile technical support service to staff and students to support teaching, research and professional services. FSE's research and teaching quality is recognised globally; this is an exciting opportunity to join us in Manchester and contribute to the provision of a sector leading technical service.

The Photon Science Institute (PSI) is a multi-disciplinary research centre in which physicists, chemists, engineers and material scientists use light to enable science as well as developing new ways of generating, manipulating and detecting it. The PSI is housed in a state-of-the-art, purpose-built facility and benefits from a comprehensive suite of laser sources covering a wide range of wavelengths, energies and pulse durations, providing comprehensive photonic imaging and characterisation. The PSI also houses significant advanced materials modification and analysis tools alongside device fabrication and measurement capability.

The development of ion-beam tools for materials doping, modification and analysis has enabled advances in technology that range from microelectronics through to the study of biological systems. In particular, focused ion beam (FIB) tools for materials modification have provided a key tool for enabling the development of nanotechnologies through the ability to create nanostructured materials and devices. Most recently the demands associated with realising single-ion dopants in materials (e.g. silicon or diamond) for use as quantum bits (qubits) has led to the development of a new generation of FIB tools. The most advanced of these has recently been commissioned at the University of Manchester (UoM), integrating state-of-the-art FIB and electron beam technologies to provide the 'Platform for Nanoscale Advanced Materials Engineering' (P-NAME), and subsequently Advanced Materials Enrichment & Synthesis (AMES) tool. It is established within the Photon Science Institute (PSI) at the UoM following significant investment by the EPSRC, Henry Royce Institute and the UoM itself.

MAIN DUTIES AND RESPONSIBILITIES

Equipment & Operations

- Deliver the day-to-day maintenance and upkeep of the AMES facility – monitor performance, evaluate faults and schedule service visits for the facility.
- Become an expert user of the facility and of related facilities associated with materials preparation and analysis.
- Establish, select, follow, and adapt experimental protocols with users. Advise and assist users on the implementation of experimental designs.
- Contribute detailed professional scientific/engineering expertise through highly developed specialist knowledge and skills in a specific field.
- Provide high quality and reliable advice, guidance and training to a range of staff, students, visitors and external customers on your specific area of expertise.
- Proactively and freely contribute creative and innovative solutions.
- Ensure that all experimental requests are delivered in a timely fashion and in line with service performance indicators.
- Apply professional expertise to collect, interpret, evaluate and present data in support of teaching, research and/or operational planning purposes.
- Take ownership for the continuous improvement in your own knowledge, experience and expertise, while freely sharing your knowledge and training others in your area(s) of expertise.
- Develop strong and effective working relationships with colleagues across the University and at all levels of the organisations.
- Contribute to short, medium and long term planning in order to continuously improve FSE's technical operations.
- Manage a delegated budget.

- Ensure cost recovery from research and other internal and external income streams in maximized within your area of specialism.
- Provide specialist technical input and make recommendations which influence the direction of teaching and/or research operations in your area of specialism.
- Be responsible for the provision of an excellent service, proactively scan the wider environment for changes which may impact on delivery of service and use intelligence gathered to inform operation and planning processes.
- Be responsive, agile and flexible based on service need across FSE i.e. learn new techniques and/or support other areas in the Faculty should the need arise.
- Be an active and enthusiastic member of the FSE technical operations community.
- Champion a culture of continuous improvement, collaboration, consistency and innovation; and actively engage with change initiatives, leading on specific activities as appropriate.

Leadership & Management

- Line manage, supervise, motivate and develop technical staff where required.

Governance & Compliance

- Manage and take responsibility for all aspects of health and safety in the workplace within your area of specialism to ensure that the University continues to meet its legislative requirements.
- Liaise with all colleagues and safety advisors to ensure that all equipment is maintained and operated in compliance with the latest regulations e.g. PUWER, PSSR, etc. Maintain up to date knowledge of all relevant legislation.
- Act in accordance with and promote university policies, procedures and requirements at all times, in particular those relating to health and safety; procurement; finance; equality, diversity and inclusion; and information governance
- Make a difference to the life and future of our region by embedding the University's social responsibility goals within the day to day operations of the team
- Maintain a commitment to equality, diversity and inclusion
- Maintain a strong awareness of the Faculty's strategy to deliver world-class research and teaching performance as well as an understanding of how your area of work directly supports the vision and goals of the University.

Key Relationships

The role requires excellent communication skills in order to build and maintain effective collaborative relationships between all stakeholders in the Faculty of Science & Engineering and the wider University. Key relationships include:

Internal: FSE Senior Management (e.g. Heads of Research Infrastructure & Facilities, Technical Operations Managers), the wider FSE Technical Operations Team, Professional Staff (PS) colleagues, apprentices, line manager, academic staff (research and teaching), health & safety advisors and the associated committee members, FSE and University Estates and Facilities, University IT Services, students and any other relevant staff from across the University.

External: Equipment and consumable vendors, external contractors, service engineers, visitors, professional bodies and external organisations.

PERSON SPECIFICATION

Qualifications

- A qualification in a science or engineering related subject area e.g. degree, HND, HNC or

extensive work experience in a relevant technical, engineering or scientific role.

Essential

- A postgraduate degree, and/or significant practical experience, in using an ion-beam technology for material doping, material modification or analysis.
- Excellent analytical and IT skills, and experience in analysing data using e.g. LabVIEW, MATLAB/ Mathematica/ Origin and Excel.
- Ability to perform advanced optical/electronic/materials characterisation of materials and devices.
- Be recognised as an operational specialist in a specific/relevant technical field.
- A comprehensive knowledge and understanding of the relevant field.
- Ability to apply an in-depth knowledge so as to be a credible point of reference for staff and student enquiries.
- An ability to work both independently and collaboratively as a member of a multi-disciplinary team.
- Experience of working in a customer focused technical environment and delivering an exceptional experimental based service.
- Highly developed interpersonal skills, including tact, diplomacy and sensitivity.
- An ability to communicate confidently and effectively with staff from across the University at all levels of the organisation.
- Excellent oral and written communication skills.
- Excellent time management skills.
- Excellent IT skills.
- Excellent analytical and problem solving skills with the ability to identify and resolve issues effectively.
- Ability to work well under pressure.
- An awareness and understanding of all relevant health and safety requirements in the workplace, including the application of specific legislative requirements such as risk assessments, operating procedures and COSHH, etc. in a laboratory environment.
- A flexible approach to work with a willingness to undergo further training and continuous professional development as required.
- A commitment to the University's core values and to the provision of the best possible support to our students, staff and customers.

Desirable

- Experience of designing and implementing/delivering e-beam or FIB lithography .
- Expertise in materials deposition techniques (e.g. sputtering, thermal evaporation etc.), modification (e.g. lithography and etching), and/or processing (e.g. thermal annealing).
- Experience and expertise with interfacing of computer control to analytical instruments
- A PhD or advanced degree.
- Experience of leading and managing staff, trainees and/or apprentices.
- Experience of managing projects e.g. procurement, equipment installations, etc.
- Budgetary management experience and the ability to manage projects and operations within budget.

Expectations and Success Factors

- To be a proactive team member and treat all colleagues and students with respect in accordance with well-established PS Behaviours.
- To be willing to work across organisational boundaries.
- To seek new knowledge and share ideas.

- To be open and responsive to change and innovation.

In-line with the University's terms and conditions, you will be expected to work such hours as are necessary for the proper discharge of your duties and responsibilities, with a notional minimum 35 hours per week through Monday to Friday. There may be occasions when some non-core hours work could be required, however the University operates arrangements to recognise out of hours working and to ensure an appropriate balance between working and non-working time.