

Research & Development Engineer - Machining

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| Department | National Manufacturing Institute Scotland (NMIS) (https://www.nmis.scot/) | | |
| Faculty | Faculty of Engineering (www.strath.ac.uk/engineering/) | | |
| Staff Category | Knowledge Exchange | Reference No | 403111 |
| Reports To | Machining and AM team lead (Senior KE Fellow) | Grade: | 7 |
| Salary Range: | £33,309 - £40,927 | Contract Type: | Open Contract |
| FTE: | 1 (35 hours/week) | Closing Date | Monday, 18 October 2021 |

Job Advert

Who we are

The University of Strathclyde in Glasgow possesses a large internationally rated Engineering Faculty with a proud history of successful joint ventures with industrial and enterprise partners. As part of the University's strategic development the National Manufacturing Institute Scotland has been established.

The National Manufacturing Institute Scotland (NMIS) is a bold and ambitious industry-centred project to create an international centre of advanced manufacturing expertise and excellence where industry, academia and public-sector support agencies work together to transform skills, productivity and innovation, making Scotland and the UK a global leader in advanced manufacturing.

NMIS is delivered in partnership through Scottish Enterprise. NMIS is a truly collaborative project, with partners including the Scottish government, Scottish Enterprise, Highlands and Islands Enterprise, Skills Development Scotland, the Scottish Funding Council, Renfrewshire Council and the UK government through the High Value Manufacturing Catapult. The University of Strathclyde is the host University for NMIS, which will link to the wider academic communities in Scotland through the Scottish Research Partnership in Engineering and across the UK High Value Manufacturing Catapult network.

NMIS will encompass a dedicated facility that will house the Manufacturing Skills Academy (MSA), Digital Factory 2050 and the Innovation Collaboratory. Along with this dedicated new facility, existing and developing research centres will also be part of the broader NMIS Group including the Advanced Forming Research Centre (AFRC) and the Lightweight Manufacturing Centre (LMC). The posts advertised here will be based in one of these centres.

For more information, visit the National Manufacturing Institute Scotland (NMIS) Website:

<https://www.strath.ac.uk/workwithus/nationalmanufacturinginstitutescotland/>

or email NMIS-recruitment@strath.ac.uk

The Opportunity

The NMIS Machining Team, is seeking to appoint a Research and Development Engineer to work, lead and manage delivery of high value research and knowledge exchange programmes.

We would like to see candidates with experience in:

- **Advanced Machining Processes.** NMIS has several Machining research themes, which combine engineering experience with applied analytical methods, to provide applied scientific understanding of the machining process. These themes include Machining Process and Technology, Digital Machining, Lightweight Machining and Machining Distortion. Using analytical tools, such as sensory tool holders/ fixturing, machining dynamics and finite element analysis, NMIS can predict and optimise machining processes.

With a first degree and PhD in appropriate disciplines, e.g. mechanical or materials engineering; or with a good first degree and relevant work experience, you will have an established track record in providing engineering solutions in an industrial context, and experience in knowledge exchange. We are also interested in candidates with equivalent industrial experience. You will have a background in the machining of metallic and/ or composites components. You will have a good understanding of general engineering principles including, experimentation and data analysis, with a strong materials background in metals or composites. You will have the ability to work autonomously and to plan and prioritise your own workload with minimal inputs from higher management, in addition to experience of project planning and delivery. In addition, you will have excellent communication and interpersonal skills, with a proven ability to interact with a range of stakeholders from industry and academia.

Job Description

Brief Outline of Job:

Under the guidance of a Team Leader, the Research and Development Engineer will support NMIS research programmes and the development and operation of NMIS manufacturing capability, including knowledge exchange with NMIS partners and customers. In particular, the post holder will be expected to lead and contribute to research programmes with a manufacturing engineering focus and deliver solutions to the NMIS's industrial partners. The post holder will be expected to have experience in relevant areas of manufacturing and engineering.

Main Activities/Responsibilities:

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| 1. | Evaluating and developing machining manufacturing processes by: designing and conducting programs of study; applying knowledge of product requirements, product design, and manufacture; designing, modifying, and testing manufacturing methods and equipment; conferring with NMIS industrial partners and equipment vendors; and soliciting observations from operators. |
| 2. | Enhancing NMIS manufacturing related capability by proposing improvements based on estimated future requirements and research needs. |
| 3. | Work as part of a project team to deliver against specific requirements of research projects. |
| 4. | Plan and manage own workload, with guidance from Team/Project Lead as required. |
| 5. | Conduct individual and/or collaborative engineering research, including determining appropriate research methods and contributing to the development of new research methods. |
| 6. | Build contacts internally and externally, and participate in networks for the exchange of information, form relationships with customers, suppliers and colleagues for future collaboration. |
| 7. | Write up reports, individually or in collaboration with colleagues, for external organisations, and further write up findings for additional dissemination (e.g. professional publications or peer review journal publication) as appropriate. |
| 8. | Assisting in the training and development of staff and external clients in manufacturing engineering methods and processes. |
| 9. | Contribute to collaborative decision making with colleagues on academic/engineering content in areas of research. |
| 10. | Contributing to the overall NMIS growth by working as an integral part of the NMIS team effort, inputting to the research programme and capability development, as necessary, to meet strategic objectives. |

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 Good first degree and PhD (or equivalent significant professional experience in a relevant industry setting) in a relevant engineering discipline, e.g. mechanical engineering, materials or manufacturing.

D1 Chartered Engineer/Scientist, Member of professional body in an appropriate discipline.

Experience

E2 Sufficient breadth or depth of knowledge in machining research/ production activities, to contribute to knowledge exchange programmes and to the development of knowledge exchange projects/ engagements.

E3 Ability to conduct individual knowledge exchange projects, work directly and independently with clients, and to prepare new knowledge exchange proposals

E4 Experience working at a post-doctoral level in a research or knowledge exchange or similar role

E5 Knowledge and experience of working with advanced manufacturing technology

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| D2 | First-hand experience of addressing manufacturing research challenges within an academic or industrial enterprise. |
| D3 | Experience and understanding of metallic and/ or composites material properties and heat treatments |
| D4 | Experience of NX, Vericut |
| D5 | Experience of analytical tools for the machining process i.e. dynamics |
| Job Related Skills and Achievements | |
| E6 | Evidence of contribution to the successful delivery of research within an academic or industrial environment. |
| E7 | An ability to plan and organise own workload effectively with general supervision from senior colleagues. |
| E8 | Experience in project planning and delivery. |
| D6 | Experience of knowledge exchange related activities. |
| Personal Attributes | |
| E9 | Excellent written and verbal communication skills, with an ability to interact with a range of stakeholders in both industry and academia. |
| E10 | An ability to disseminate results and to contribute to research and commercial proposals. |
| E11 | An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership. |
| E12 | An ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences |

Application Procedure

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

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 Stephen Fitzpatrick, Senior KE Fellow and Team Leader of Machining and Additive manufacturing team in NMIS (s.fitzpatrick@strath.ac.uk).

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](#).

Conditions of Employment

Conditions of employment relating to the Knowledge Exchange 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.

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.

