

# Research & Development Engineer - Additive Manufacturing

Department	National Manufacturing Institute for Scotland (NMIS) ( <a href="https://www.nmis.scot/">https://www.nmis.scot/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	Knowledge Exchange	Reference No	403109
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	18/10/2021

## 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](mailto:NMIS-recruitment@strath.ac.uk)

### The Opportunity

The NMIS Additive Manufacturing 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:

- **Additive Manufacturing (AM).** This disruptive technology unlocks significant opportunities for design and manufacturing processes. This is a developing area within NMIS, and the focus is on metallic components manufactured from powder/ wire based Direct Energy Deposition (DED), and Powder Bed Fusion (PBF), and Polymer components manufactured in fused deposition modelling (FDM) and Polyjet.

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. You will have experience in Metal and/or Polymer Additive Manufacturing Technologies or significant experience with welding processes and metallurgy. You will have a good understanding of general engineering and scientific principles including experimentation and data analysis, with a strong materials background in metals and/or polymers. You will have the ability to work autonomously and to plan and prioritise your own workload with minimal inputs from higher management. In addition, it is an advantage to have experience with project management, delivery and excellent interpersonal skills – a key aspect of this role is working alongside SMEs, RTOs, Large Companies and other researchers.

## Job Description

### Brief Outline of Job:

The Research and Development Engineer will be involved a wide range of activities within the machining and additive manufacturing team of NMIS. These will include technical input/leadership and project management on wide range of AM processes focused projects, engaging with potential customers and industrial partners facilitated by colleagues within BD function of the NMIS, developing technical project scopes through initial engagements, organising and developing content for technology webinars or for events hosted at NMIS sites. The post holder will be involved in the development and operation of NMIS manufacturing capability, including research and development with partners and customers. In particular, the post holder will be expected to lead and contribute to this through industrial research programmes with a manufacturing engineering focus, and deliver solutions to the projects industrial partners.

### Main Activities/Responsibilities:

1.	Evaluating and developing additive 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 additive 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 as well as lead 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 and depth of knowledge in additive research 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
- E6 Knowledge and experience of working in either wire or powder based additive manufacturing (DED or PBF) or automated welding processes (PAW, GTAW, TIG, MIG), or polymer based processes
- D2 First-hand experience of addressing manufacturing research challenges within an academic or industrial enterprise.
- D3 Experience and understanding of metallic material properties and heat treatments
- D4 Experience and understanding of design for additive manufacturing methodologies

### Job Related Skills and Achievements

- E7 Evidence of contribution to the successful delivery of research within an academic or industrial environment.
- E8 An ability to plan and organise own workload effectively with general supervision from senior colleagues.
- E9 Experience in project planning and delivery.
- D5 Experience of knowledge exchange related activities.

### Personal Attributes

- E10 Excellent written and verbal communication skills, with an ability to interact with a range of stakeholders in both industry and academia.
- E11 An ability to disseminate results and to contribute to research and commercial proposals.
- E12 An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership.
- E13 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 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/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](mailto:s.fitzpatrick@strath.ac.uk)).

### The place of useful learning

The University of Strathclyde is a charitable body, registered in Scotland, number SC015263

## Conditions of Employment

Conditions of employment relating to the Knowledge Exchange 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 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](#).

## 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.



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