

# Materials Knowledge Exchange Associate

Department	Advanced Forming Research Centre, Department of Design, Manufacture and Engineering Management ( <a href="http://www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/">www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/</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	396105
Reports To	Welding and Joining Theme Lead	Grade:	7
Salary Range:	£33,309 - £40,927	Contract Type:	Fixed Term 3 years Contract
FTE	1 (35 hours/week)	Closing Date	26/09/2021

## Job Advert

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 Advanced Forming Research Centre (AFRC) has been established near Glasgow's International Airport. The AFRC is the embodiment of a £30 million collaborative investment by Industrial, Academic and Government partners seeking to establish a world-leading research facility for forging and forming technologies.

The AFRC is seeking to appoint an experienced Materials Knowledge Exchange (KE) Associate to support the delivery of high value research programmes focused on the characterisations, assessments and mechanical properties in solid state joints. Recently the Centre has invested significantly in advanced materials characterisations equipment and rotary friction welding and is rapidly developing a technical theme to specialise in this area. The candidate will also be expected to support and contribute to high value industrial funding proposals in support of a range of projects across the Centre. The post holder will be expected to work between the AFRC and its industrial partners and there will be a strong emphasis on knowledge exchange.

To be considered for this role, you will be educated to a minimum of PhD level in an appropriate discipline i.e. Materials Science, Materials Engineering, Physical science or Mechanical Engineering, or be educated to a minimum of 2:1 Honors degree with significant relevant industrial experience. You will have some research and/or industrial experience in at least two of the following technical areas:

- A good basic knowledge of materials and the way that manufacturing processes can develop or modify material's microstructure to achieve desired mechanical properties;
- Techniques of materials characterisation e.g. SEM, EDX, WDS, EBSP, optical microscopy and mechanical testing;
- Good knowledge and/or experience in solid state joining e.g. rotary friction welding, linear friction welding, friction stir welding etc;
- Good knowledge and or experience in non-destructive evaluation techniques.

Whilst a Knowledge Exchange Associate is ideally sought for this position; applications from candidates who are close to PhD completion or whose award is pending, are welcome. In such circumstances, appointment will be made at the Knowledge Exchange Assistant level (Grade 6, £26,274 - £29,552) and duties will be adjusted to reflect the grade of the post. This will continue until the PhD award is confirmed, at which point the duties and grade will be revised accordingly.

The post holder will also have the ability to work autonomously, plan and prioritise their own workload with guidance from a team / project leader, and deal with complex problems presented to them by colleagues. Preferably, the individual will have experience of project planning and delivery, as well as excellent communication and interpersonal skills, with a proven ability to interact with a range of stakeholders from industry and/or academia. Lastly, the post holder may be required to make a contribution to the administrative activities of the AFRC including membership of relevant committees. You will have an established track record in providing engineering solutions in an industrial context as well as experience of supporting research

and development of manufacturing processes. You will have excellent troubleshooting skills, including a methodical approach to solve complex problems and you will have the ability to work as part of a multi-disciplinary team.

## Job Description

### Brief Outline of Job:

With guidance from the Welding and Joining Theme Lead you will contribute to the delivery of engineering projects, taking responsibility for the delivery of research outcomes. You will be responsible for undertaking and supporting research and development relevant to the AFRC's core competencies: forming, forging, rotary processes, joining, material modelling and tooling design/life, exploiting your expertise in materials characterisation. You will be expected to contribute to the generation of proposals for creating research and commercial income that will enhance the AFRC standing, capability and reputation. The successful candidate will also be expected to deliver projects to time and within budget, and provide project updates as required for the relevant Team / Research Lead, senior or programme management teams and customers/stakeholders. You will be expected to support business development activity at the AFRC by various means including sharing specialist/expert knowledge, hosting guests/tours and demonstrating AFRC capability.

### Main Activities/Responsibilities:

1.	Carry out applied research in the area of Materials Characterisations, the effect of joining on microstructure evolution, effects of heat treatment and subsequent process on mechanical properties.
2.	Enhance the AFRC manufacturing related capability by proposing improvements based on estimated future requirements and research needs.
3.	Take ownership of scientific research and employ engineering solutions where appropriate with respect to joining related material characterisations and development of appropriate part manufacturing methodologies.
4.	As part of a wider knowledge exchange/project group or programme, develop knowledge exchange objectives, identify and secure funding by develop proposals for knowledge exchange activities.
5.	Develop and manage experimental trials for both internal and external stakeholders using known scientific methodologies.
6.	Work as part of a knowledge exchange project team to deliver against specific requirements of research and knowledge exchange projects.
7.	Plan and manage own workload, with minimal guidance from Theme/Team/Project Lead as required.
8.	Conduct individual and/or collaborative engineering research activities, including determining appropriate research methods and contributing to the development of new research methods for industrial applications.
9.	Identify opportunities for strategic development of new projects by building contacts internally and externally, participating in networks for the exchange of information, form relationships with customers, suppliers and colleagues for future collaboration.
10.	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.
11.	Assist in the training and development of staff and external clients in manufacturing engineering methods and processes.
12.	Contributing to collaborative decision making with colleagues on academic/engineering content in relevant areas of research.
13.	Contributing to the overall AFRC growth by working as an integral part of the AFRC team effort, inputting to the research programme and capability development, as necessary, to meet strategic objectives.

14. 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)

E.1 Good first degree in a relevant engineering discipline, e.g. Mechanical Engineering, Materials Science, Physical science or Manufacturing, or equivalent relevant work experience.

E.2 PhD in a relevant engineering discipline, or equivalent relevant work experience.

D.1 Member of professional body in an appropriate discipline.

### Experience

E.3 Knowledge of the influence of joining/ forming / forging processes on material behaviour with particular reference to material's microstructure evolution and mechanical properties and inter-connection between them

E.4 Knowledge of experimental techniques for materials characterisations in terms of microstructure analysis and mechanical property determination

E.5 Knowledge of analytical and/or experimental validation and verification techniques and approaches, for example design of experiments.

D.2 Knowledge of NDT characterisation methodologies e.g. ultrasonic inspection

### Job Related Skills and Achievements

E.6 A broad knowledge of materials, including both ferrous and non-ferrous alloys – especially those relevant to the aerospace sector;

E.7 Knowledge of a range of materials characterisation techniques including mechanical testing, optical microscopy, SEM techniques, residual stress measurement techniques.

E.8 An understanding of the effect of processing on materials e.g. grain size, recrystallization, flow behaviours, residual stress evolution.

E.9 An ability to plan and organise own workload effectively with general supervision from senior colleagues.

E.10 Evidence of contributing to the successful planning and delivery of projects within an academic or industrial environment.

D.3 Experience of knowledge exchange related activities.

### Personal Attributes

E.11 Excellent written and verbal communication skills, with an ability to interact with a range of stakeholders in both industry and academia.

D.4 An ability to disseminate results and to contribute to research and commercial proposals.

E.12 An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership.

## Other Relevant Factors

E.13 An ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

E.14 A motivated self-starter who takes initiative and is solution orientated in their approach to complex problems

## 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 Dr Laurie da Silva, Welding and Joining Theme Lead ([laurie.da-silva@strath.ac.uk](mailto:laurie.da-silva@strath.ac.uk) / +44 (0) 141 534 5523/ +44 (0) 781 168 4731).

### Conditions of Employment

Conditions of employment relating to the Technical Services 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](#).

### 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.

### 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.

