

Research Associate

| | | | |
|----------------|---|----------------|---------------------------|
| Department | Electronic and Electrical Engineering (www.strath.ac.uk/eee/) | | |
| Faculty | Faculty of Engineering (www.strath.ac.uk/engineering/) | | |
| Staff Category | Research | Reference No | 83656 |
| Reports To | The Head of Department, through Professor Gareth Pierce | Grade: | 7 |
| Salary Range: | £31076 - £38183 | Contract Type: | Fixed Term (18 months) |
| FTE: | 1 (35 hours/week) | Closing Date | Sunday, 10 September 2017 |

Job Advert

The Centre for Ultrasonic Engineering (CUE), based in the Department of Electronic & Electrical Engineering (EEE) at the University of Strathclyde is seeking to recruit a Research Associate to participate in a multi-partner collaborative research project focused on autonomy in Non-Destructive Testing (NDT) inspection processes for wire arc additive manufacture (WAAM).

Daily activities within the role will include the programming of multiple industrial robots in an industrial environment, and collecting sensor data (ultrasonic and other NDT) from a variety of test specimens using these robot systems and interpreting experimental results. You will be responsible for aspects related to the operation of robotic NDT cells, including programming, data collection and safety and as such duties can involve both mechanical and electrical systems. You will undertake extensive low-level programming and NDT instrument interfacing, motivated by the aim of acquiring, interpreting and reporting scientific NDT results to the supervision team, industrial stakeholders, and the overall project management team. Scientific publication and dissemination of results will be required, through both academic journals and conferences.

To be considered for the role, you will be educated to a minimum of PhD level in an appropriate discipline, or have significant relevant experience in addition to a relevant degree. (e.g. physics, control engineering, automation, mechanical & electrical engineering). You will have demonstrable capability in industrial robotic programming and automation for precision instrumentation such as NDT and metrology applications. Ideally, you will have experience in ultrasonic NDT techniques and the complexities of ultrasonic wave propagation in complex geometry materials. You will have a developing ability to conduct individual research work, to disseminate results and to prepare research proposals. You will have excellent written and verbal communication skills, with an ability to listen, engage and persuade and to present complex information in an accessible way to a range of audiences, and you will have the ability to work as part of a team, integrating with existing research team members and collaborating effectively with both academic and industrial partners.

The Research Associate will be required to travel to partner sites for technical meetings and project demonstrations on a regular basis and, as such, applicants must be willing and able to travel. Applications from candidates with a valid UK driving licence and access to their own vehicle are therefore desirable. The position will entail working both at the Glasgow City Centre campus, and at the Advanced Forming Research Centre near Glasgow International Airport.

Job Description

Brief Outline of Job:

To programme multiple industrial robots for in an industrial additive manufacturing environment, and collect ultrasonic and other NDT data from a variety of test specimens, interpreting experimental results; responsible for all aspects of the operation of the NDT cell, including programming, data collection and safety; responsible for troubleshooting both mechanical and electrical systems on a daily basis; undertaking extensive low-level programming and instrument interfacing; responsible for the interpretation of data and reporting scientific results to the supervision team, industrial stakeholders, and the overall project

management team; scientific publication and dissemination of results through academic journals and conferences; to engage where required in relevant teaching, professional and knowledge exchange activities; and to input to administrative activities.

Main Activities/Responsibilities:

| | |
|-----|---|
| 1. | As part of a wider research group, develop new techniques in robotics, NDT and additive manufacturing research, applying appropriate approaches to identify areas for research and develop new research methods and extend the research portfolio. |
| 2. | Undertake research in wire arc additive manufacturing processes. |
| 3. | Interpret ultrasonic phased array data in complex materials. |
| 4. | Software development (Matlab, LabView, C++) |
| 5. | Undertake instrumentation interfacing and low-level programming. |
| 6. | Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration. Join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding. |
| 7. | Working on-site (city centre and AFRC) in an industrial environment at numerous site locations. |
| 8. | Identify sources of funding and contribute to the securing of funds for research, including drafting grant proposals and planning for future proposals. |
| 9. | Participate in Departmental teaching and project supervision |
| 10. | Plan and manage own workload, with guidance from colleagues as required |
| 11. | Contribute in a developing capacity to Department/School, Faculty and/or University administrative and management functions and committees. |
| 12. | Write up research work for publication, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, peer reviewed journal publications and presentation at conferences. |
| 13. | 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)

- | | |
|----|--|
| E1 | Good honours degree and PhD (or equivalent professional experience) in an appropriate discipline(e.g. physics, control engineering, automation, mechanical & electrical engineering) |
| D1 | Membership of relevant Chartered/professional bodies (including Higher Education Academy). |

Experience

- | | |
|----|--|
| E2 | Experience in industrial automation systems and robot programming (ideally KUKA) |
| E3 | Programming experience (Matlab, LabView, C++) |
| E4 | Experience of the integration of multiple complex measurement systems |
| D2 | Experience in non-destructive testing ultrasonic NDT |
| D3 | Experience in arc welding / fusion / additive manufacture processes |

Job Related Skills and Achievements

- | | |
|----|---|
| E5 | Ability to deliver projects to industrial customers i.e. to specification and within set timescales |
| E6 | Track record of safety considerations in industrial automation |
| E7 | Developing ability to conduct individual research work, to disseminate results and to prepare research proposals. |
| D4 | A fundamental understanding of ultrasound |
| D5 | Knowledge of multiple arc welding processes |
| D6 | Excellent mechanical and electric engineering skills |

Personal Attributes

E8 Self-starting capability on complex projects

E9 Ability to work effectively within a team environment

E10 Excellent written and verbal communication skills, with an ability to listen, engage and persuade and to present complex information in an accessible way to a range of audiences.

E11 An ability to plan and organise own workload effectively

Other Relevant Factors

E12 Willing and able to travel to partner sites for technical meetings and project demonstrations

D7 Valid UK driving licence with access to own vehicle

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 Professor Gareth Pierce, (0141 548 2617, s.g.pierce@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Research 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.

Interviews

Formal interviews for this post will be held on Tuesday, 19 September 2017 .

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.

