Project Engineer (Remote Laser Welding)

WMG

£29,799 - £38,833 pa

2 positions available;
1 x Fixed Term Contract for 2 years
1 x Fixed Term contract until 31/3/2020

This position will support rapid deployment of new manufacturing technologies necessary for lightweight strategy in automotive industry. It builds on the WMG simulation technology which led to first ever fully digitally developed aluminium car door with remote laser welding.

This is an exciting opportunity for you to apply your technical skills within the strategically important areas of remote laser welding (RLW) technology and its application for a new automotive manufacturing system.

- Post 1 is in the area of experimental characterisation of laser welding joints and their quality improvement and;

- Post 2 is in the area of robotics/control/automation and their applications in manufacturing.

You will have excellent communication skills, be flexible, and have the ability to work independently and as part of a team. You will work closely with senior research staff and will be responsible for developing robotics systems applications in manufacturing.

You will hold an honours degree qualification, have undertaken complimentary research in ONE of the above areas and potentially be able to demonstrate your capability through appropriate industrial experience.

If you require further information about this position, please contact Professor Darek Ceglarek D.J.Ceglarek@warwick.ac.uk for an informal discussion.

This role will be advertised shortly on the University of Warwick Job Search pages. If you would like to be considered for this role, please forward your CV to WMGrecruitment@warwick.ac.uk clearly stating the job title that you are interested in, and we will make contact with you when it is advertised. You can also set up job alerts on the University of Warwick Job Search page, so you can be made aware of vacancies that may be suitable when they become available.
JOB DESCRIPTION

JOB PURPOSE:

You will be employed to work with the multidisciplinary research team of Digital Lifecycle Management to support the work of the Department and develop and enhance its reputation, both internal and external to the University. You will assist the Project Director and Project Collaborators in the successful execution of the project. There is some flexibility in the areas of specialism sought from the successful candidate. The Department would however be particularly interested in the candidate being able to contribute in the areas of (i) mechanical/material science engineering; or, (2) mechanical/control engineering/automation/computer engineering.

DUTIES:

1. For position in the area of experimental characterisation of laser welding joints and their quality improvement.
   a. To assist with research projects conducting experimental characterisation of laser welding joints. To demonstrate excellent knowledge of material and specimen preparation for accurate microscopy analysis.
   b. To determine appropriate metrology solution to enable effective characterisation of mechanical strength of laser welded joint. To prove good knowledge in conducting mechanical testing, using standard Instron testing equipment.
   c. To determine and apply appropriate data analysis methods and tools in order to achieve specified project objectives.

2. For position in the area of robotics/control/automation and their applications in manufacturing.
   a. To assist with research projects developing automation (incl. PLC), programming of industrial robots, and be able to adopt advanced analytics and data science methods to efficiently carry out in-depth analysis and develop predictive techniques for quality improvement. To demonstrate excellent knowledge of mechanical engineering and robotic system.
   b. To determine appropriate metrology solution to enable effective monitoring of robotic cell. To prove good knowledge in conducting testing and experiments using industrial robots.
   c. To determine and apply appropriate data analytics methods and tools in order to achieve specified project objectives.

3. Both positions:
   a. To conduct exploratory data analysis and model development using standard statistical software packages.
   b. To contribute to academic publications, technical reports and other presentations and dissemination methods.
   c. To develop reports and presentation materials describing project objectives, methods, data, and results and to share information with colleagues and produce recommendations.
   d. To assist with the development and delivery of teaching and training materials to disseminate the findings in a format that will encourage successful implementation.
   e. To support researchers on project deliverables & identify routes for achievement of targets.
## PERSON SPECIFICATION

**POST TITLE:** Project Engineer (Remote Laser Welding)  
**DEPARTMENT:** WMG

### REQUIREMENTS
The post holder must be able to demonstrate:

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<th>ESSENTIAL (E) REQUIREMENTS</th>
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| Educated to honours degree or equivalent in Engineering, statistics or related disciplines | E | a |
| Technical knowledge and experience in the areas of (Post 1) mechanical engineering and/or material science, and the use of software packages such as MATLAB, C++, Minitab and SPSS, to analyse data and extrapolate correlation patterns; **OR** | E | a, c, d |
| Technical knowledge and experience in the areas of (Post 2) mechanical engineering, robotics, programming, specifically Matlab, C++, CAD/CAM, and RobotStudio | E | a, c, d |
| Have demonstrated hands on experience to (1) design and run physical experimentation, analyse and interpret data using multivariate statistical analysis; **OR** (2) program industrial robots and develop control architectures | E | a, c, d |
| Have demonstrated excellent knowledge of (Post 1) material and specimen preparation; **OR** (Post 2) automation and control, PLC programming | E | a, c, d |
| Ability to maintain and deliver on project plans within deadlines | E | a, c |
| Ability to work with multidisciplinary experts for problem solving skills | E | a, c |
| Good effective communication (oral and written) skills, presentation and training skills, with the ability to communicate with project partners | E | a, c, d |
| Good interpersonal skills, with a flexible approach to working | E | a, c, d |
| Ability to work independently and as part of a team on research programmes | E | a, c |
| Ability to initiate, plan organise, implement and deliver programmes of work to tight deadlines | E | a, c |
| A significant level of relevant product development experience in an industrial context | D | a, c, d |
| Some experience in development and delivery of training material | D | a, c |
Further Particulars

For information about WMG, please visit our website:

http://www2.warwick.ac.uk/fac/sci/wmg/

This role will sit within the Digital Lifecycle Management Group in WMG. This Group, headed by Professor Darek Ceglarek, conducts research aimed at developing methodologies that integrate products, processes and complex services with system design to create a novel closed-loop lifecycle modelling and synthesis framework, as well as self-resilient production and service systems that are robust to changes and six-sigma faults. This breaks new ground by establishing a field of research on the interface between product design, system design, manufacturing and intangible services. The developed methodologies have significant impact on a range of areas including automotive, aerospace, consumer goods and the healthcare services.

For further information on the work of the Group, please visit:

https://www2.warwick.ac.uk/fac/sci/wmg/research/manufacturing/