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| UNIVERSITY OF NOTTINGHAMRECRUITMENT ROLE PROFILE FORM  |

**Job Title:** Research Associate/Fellow in Engineering Design and Manufacturing Technologies for Aero-Engines

**School/Department:** Faculty of Engineering, Division of Manufacturing and Process Technologies - Rolls-Royce University Technology Centre in Manufacturing

**Salary:** £25,513 - £37,394 per annum, depending on skills and experience, (minimum £28,695 with relevant PhD). Salary progression beyond this scale is subject to performance

**Contract Status:** This post is available immediately and will be offered on a fixed-term contract for a period of one year

**Hours of Work:** 36.25 hours per week - full-time

**Location:** The University of Nottingham, Faculty of engineering [university park campus](http://www.nottingham.ac.uk/about/campuses/universityparkcampus.aspx), and working within the Rolls-Royce university technology centre (UTC) in manufacturing technology

**Responsible to:** Professor Dragos Axinte; Dr. Stewart Lowth

**Purpose of the New Role:**

To coordinate and carry out research into innovative design, simulation and mechanisms for fixturing solutions and develop advanced manufacturing technologies for gas turbine engines.

**Main Duties and Responsibilities:**

* To conduct research relating to the design of fixtures for components as specified by Rolls-Royce in order to meet their production requirements.
* Conduct research in conventional/non-conventional machining processes related to the manufacture of gas turbine engines.
* Simulate fixture behaviour under loading conditions yielded by the manufacturing processes utilised for the production of the components.
* Organize and conduct trials to evaluate the performance of prototype fixturing systems and novel manufacturing approached developed through controlled experiments.
* To write research reports and papers in order to disseminate research results and develop a track record of published research findings in internationally respected peer-reviewed journals. Further dissemination of results should also occur through invited oral and poster presentations at international meetings, conferences and seminars.
* To write reports corresponding to the development of the research work as part of the deliverables of the Rolls-Royce assigned projects.
* Participate in the regular meetings of the UTC and Research Groups.
* Contribute to the research work of the UTC and collaborate on projects with colleagues within the UTC and their partners as required.
* Operate within the safety systems, IT code of practice etc. as required by the Division, Department and University.
* Facilitate the growth of the UTC through research excellence and contributing to funding proposals.

This job description may be subject to revision following discussion with the person appointed and forms part of the contract of employment.

**Person Specification**

**Knowledge, Skills, Qualifications & Experience:**

|  | **Essential** | **Desirable** |
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| **Qualifications & Education** | * Good undergraduate degree or equivalent (BEng / BSc) in mechanical / manufacturing engineering or in a closely related discipline.
* Must either possess a relevant PhD or equivalent (or PhD close completion) or have substantial relevant prior experience.
 | * Postgraduate degree or equivalent (MPhil/PhD) in Manufacturing or Mechanical Engineering subject.
* Higher degree or equivalent (MEng/ MSc) in mechanical / manufacturing engineering or in a closely related discipline.
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| **Knowledge & Skills** | * Strong mechanical engineering knowledge.
* Strong knowledge in manufacturing processed
* Excellent analytical skills and ability to evaluate/simulate mechanical systems.
* Problem solving skills with a track record in producing innovative mechanical designs.
* Ability to read and produce engineering drawings.
* Ability and willingness to do both practical experimental research and computer based simulations.
 | * Knowledge of workholding techniques / fixture design.
* Experience in conventional/non-conventional machining and surface integrity
* Background understanding of finite element modelling techniques.
* Skilled in research methods and conducting experiments.
* Knowledge of manufacturing processes and design for manufacture.
* Understanding of variation propagations through tolerancing of assemblies
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| **IT Skills** | * Good general IT skills, including a good working knowledge of word processing, spreadsheets, and Email systems.
* Skilled in the use of using a relevant 3D CAD packages
 | Experience of using:* FE package for design optimisation (stress/thermal)
* Matlab or other engineering software
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| **Experience** | * Research or industrial experience of producing and developing small mechanisms.
* Practical experience in manufacturing technologies
* Practical experimental experience.
* Experience of project management and delivering projects to deadlines
* Experience presenting to a variety of audiences.
 | * Research or industrial experience of designing, testing or simulation of fixtures.
* Experience in machining technologies
* Experience working within a closely related engineering discipline
* Experience in designing / developing production fixtures or experimental fixtures for manufacturing operations.
* Track record in FE modelling.
* Record of publications (journal papers) or equivalent reporting activities
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| **Personal Attributes / Other** | * Innovative and creative thinker.
* Dedicated and hardworking with a good working attitude for a demanding role.
* Excellent planning and organisational skills with an ability to ensure deadlines are met.
* Excellent communication skills; able to effectively communicate technical information to a variety of audiences.
* Ability to work in a team as well as on own initiative.
 | * Have a genuine interest in engineering.
* Desire to develop expertise in this area of engineering research.
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Due to the requirements of the UK Border and Immigration Agency, applicants who are not UK or EEA nationals and whose immigration status entitles them to work without restriction in the UK will be considered on an equal basis with UK and EEA nationals.  Other non-UK or non-EEA nationals whose employment will require permission to work subject to a resident labour market test may only be considered if there are no suitable UK or EEA national candidates for the post.  Please visit <http://www.ukba.homeoffice.gov.uk/> for more information.

Informal enquiries may be addressed to Prof. D Axinte, tel: 0115 951 4117 or Email: dragos.axinte@nottingham.ac.uk or or Dr. Stewart Lowth, Email: Stewart.Lowth@nottingham.ac.uk, tel: 0115 974 84846.  Please note that applications sent directly to this Email address will not be accepted.