UK Entrepreneurial University of the Year 2013/14
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University of Strathclyde Glasgow

Research Associate in Composite Materials Analysis

Department	Mechanical and Aerospace Engineering (www.strath.ac.uk/mae/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Research	Reference No	84141
Reports To	The Head of Department, through Dr Meisam Jalalvand	Grade:	7
Salary Range:	£31076 - £38183	Contract Type:	Fixed Term (12 months)
FTE:	1	Closing Date	Wednesday, 6 September 2017

Job Advert

The Faculty of Engineering at the University of Strathclyde is one of the largest and most successful engineering faculties in the UK, and the largest in Scotland. As a leading international technological university, Strathclyde is recognised for its world class research, knowledge exchange and educational programs. The Department of Mechanical & Aerospace Engineering's mission is to advance knowledge and commerce in mechanical and aerospace engineering, and apply fresh thinking to the challenges faced by industry and society.

This is an exciting opportunity to join a research group exploring novel structural health monitoring technology for different materials including composites and metals.

As a Research Associate you will design novel configurations for indicating/sensing fatigue damage in the structure. Using available analytical solutions, expanding new ones and with the help of numerical techniques, you will predict delamination growth due to fatigue loading and perform parametric analysis. Working with a team of researchers, and in collaboration with the University of Bristol, you will find the optimised parameters, build experimental samples and perform tests to prove the concept.

To be considered for the role, you will be educated to a minimum of PhD level in Engineering/Materials Science (or a closely related discipline), or have significant relevant experience in addition to a relevant degree. You will have sufficient breadth or depth of knowledge in fracture mechanics, analytical methods, numerical modelling as well as a wider knowledge of composite materials. You will have a developing ability to conduct individual research work, to disseminate results and to prepare research proposals. You will have an ability to plan and organise your own workload effectively and an ability to work within a team environment. You will have excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

Whilst not essential for the role, applications are welcomed from candidates with: relevant work experience, membership of relevant Chartered/professional bodies (including the Higher Education Academy), experience of relevant student supervision and teaching activities, and/or experience of knowledge exchange related activities.

Job Description

Brief Outline of Job:

To undertake a specific research, creatively designing new configurations based on a novel idea, under the general guidance of a research leader; to establish a personal research portfolio and plan research proposals, with assistance from senior colleagues as required; to engage where required in relevant teaching, professional and knowledge exchange activities; and input to administrative activities.

Main Activities/Responsibilities:

1.	Expand available analytical fracture mechanics solutions for new configurations and different loading conditions
2.	Undertake fracture and fatigue analysis of delamination growth using analytical solutions
3.	Undertake numerical modelling of delamination propagation
4.	Independently design new configurations for specific delamination growth rates in fatigue loading for given loading conditions
5.	Design demonstrators and propose test procedures
6.	Manufacture the specimens and perform required experimental tests, individually or as a member of a team.
7.	As part of a wider research group or programme, develop research objectives and proposals for own or joint research and play a lead role in relation to a specific project/s or part of a broader project, with guidance from senior colleagues as required.
8.	Plan and manage own workload, with guidance from colleagues as required.
9.	Conduct individual and/or collaborative research, including determining appropriate research methods and contributing to the development of new research methods.
10.	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.
11.	Join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding.
12.	Supervise student projects, provide advice to students and contribute to teaching as required by, for example, running tutorials and supervising practical work.
13.	Contribute in a developing capacity to Department/School, Faculty and/or University administrative and management functions and committees.

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	Minimum 2:1 Honours Degree in Engineering, Physics or Applied Mathematics, or a related subject
E2	PhD (or equivalent professional experience) in Engineering, Physics or Applied Mathematics
D1	Membership of relevant Chartered/professional bodies (including Higher Education Academy).

Experience

E3	Sufficient breadth and depth of knowledge in Fracture Mechanics, Fatigue analysis, composite materials, Finite Element modelling, analytical methods to contribute to a state-of-the-art research programmes and to the development of research activities.
D2	Relevant experience in fracture and fatigue analysis of composite materials using analytical analysis, Finite Element (VCCT and/or Cohesive elements).
D3	Previous experience in testing composite materials.

Personal Attributes

E4	The ability to independently conduct research work to disseminate results and to prepare research proposals.

E5	Strong problem solving capability.
E6	Ability to plan and organise own workload effectively.
E7	Ability to work within a team environment.
D4	Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.
Other Relevant Factors	
D5	Track record close to the area of the project.

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 Meisam Jalalvand, Lecturer in Composite Structures (m.jalalvand@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.

Interviews

It is anticipated that interviews will take place on/around week commencing 18 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.