UNIVERSITY OF DERBY

JOB DESCRIPTION

JOB TITLE	Researcher in Composite Materials		
DEPARTMENT / COLLEGE	Institute for Innovation in Sustainable Engineering		
LOCATION	Lonsdale House, Derby		
JOB NUMBER	0828-17	SALARY	£25,728 per annum
REPORTS TO	Professor in Composite Materials		

Role Summary

A **Post-doctoral Research Associate** is sought to work on the Innovate UK project TMAP.

TMAP Project
The automotive sector is under constant pressure to reduce carbon emissions and bring down fuel consumption by reducing the weight of vehicles, with an increase in safety requirements. The traditional production processes for cars are still focused mainly on the processing of metal chassis and other components. Although plastics are extensively used, the deployment of fibre reinforced composites for high volumes of cars is still in the pioneering phase. The project will develop innovative product functionalities which will lead to a remarkable impact for both producers and users, in the following terms:

- Cost increase pertaining to those functionalities integrated into products should be below 10% with respect to the cost of conventional products.
- Improvement in the product performance above 20% in the targeted functionalities.

The Candidate
The successful applicant must have theoretical and practical knowledge of Finite Element Analysis using ABAQUS or similar packages, programming languages (e.g. FORTRAN), experience in writing user-defined subroutines applied to composite and/or advanced materials. Experience in open source FEA/CFD packages and High Performance Computing is also desirable.

This position has funding for up to three years and is available from **1 March 2018** (subject to finalisation of contract).

Informal enquiries, please contact Professor Angelo R Maligno; email: a.maligno@derby.ac.uk

Principal Accountabilities

1. Deliver the Innovate UK work packages and activities assigned to the University of Derby.

2. Provide guidance, as required, to other colleagues working on the Innovate UK TMAP research project and other research projects in their specialist field.

3. Assist and informally help students working in the same research discipline, and provide limited supervision as appropriate.

4. Write research reports and papers and present at conferences in accordance with project objectives and deliverables.

Person Specification

Short listing will be carried out by assessing suitability against the criteria set out in the person specification, as far as it is reasonable to do so before interview.

Essential Criteria

Qualifications
- PhD (pending or awarded) in a relevant discipline involving computational mechanics, composite and/or advanced materials.

Experience
- Theoretical and practical knowledge of Finite Element Analysis using ABAQUS or similar packages, programming languages (e.g. FORTRAN), experience in writing user-defined materials subroutines.

Skills, knowledge and abilities
- Developing research skills, with the ability to creatively apply relevant research approaches, models, techniques and methods

- Ability to communicate complex information clearly both in writing and through oral presentations

- Ability to build relationships and work collaboratively with colleagues, internally and externally

- Ability to use analysis, initiative and creativity to solve problems in a research context

- Self-motivated and able to deliver successful projects both independently and as part of a team

Business requirements

- Committed to a high-performance culture, fostering continuous improvement and driving quality

- Able to take a flexible approach to work, in particular demonstrating an ability to work effectively with an international team, attending meetings in Europe and attending and presenting at conferences overseas.

Desirable Criteria

Experience

- Experience in open source FEA/CFD packages.
- Computational Damage and Fracture Mechanics.

Skills, knowledge and abilities

- Knowledge of High Performance Computing environment.

Benefits

As well as competitive pay scales, we offer generous holiday entitlement. We also offer opportunities for further salary progression based on performance, and the opportunity to join a contributory pension scheme.

For more information on the benefits of working at the University of Derby go to

https://jobs.derby.ac.uk/display.aspx?id=1912&pid=0&tabId=230