



Job title	Research Fellow in Advanced Ceramics Discovery and Processing	Job family and level	Research and Teaching Level 4
School/ Department	Faculty of Engineering	Location	University Park

Purpose of role

As part of the EPSRC funded Fellowship team, you will perform research aimed at developing the next generation of Environmental Barrier Coatings (EBCs) using Material Discovery Apparatus (MDA) and Suspension Plasma Spray (SPS). You will be developing new compositions through thermodynamic modelling and characterise those samples using x-ray diffraction (Rietveld refinement). Successful compositions will be developed into coatings using SPS, and the samples will be characterised using advanced electron microscopy, mechanical testing and thermal cycling. It is expected that you will undertake supervision of PhD students, promote and engage in research and training events, and collaborate with industrial or academic partner institutions within the project.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Design and develop next generation of Environmental Barrier Coatings (EBCs) using Material Discovery Apparatus (MDA) and Suspension Plasma Spray (SPS). Successful compositions will be developed into coatings using SPS, and the samples will be characterised using advanced electron microscopy, mechanical testing and thermal cycling.	50%
2	Supporting the EPSRC Fellow within this collaborative project by working closely with 15 academic and industrial partners. This includes interaction with other early stage researchers, participation in meetings and discussions and online activity. Take part in secondment/visits to academic and industrial partners across 7 countries.	10%
3	Production of publications, dissemination of results - presentations and travel to meetings and outreach to the industry, scientific community.	20%
4	As a member of the research group, supervise PhD students, regularly liaising with researchers and other students in the team. You will also be responsible for training new researchers.	5%
5	Writing new research proposals.	10%
6	Any other duties appropriate to this post as required by their line manager	5%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ Skills in ceramic composition development or thermodynamic/kinetic modelling ▪ Laboratory skills in Metallography sample preparation ▪ Excellent communication and presentation skills ▪ Excellence at writing in the English language ▪ Well organised and self-motivated, able to work independently and as part of a team 	<ul style="list-style-type: none"> ▪ XRD reitveld refinement ▪ Skills in advanced electron microscopy characterisation ▪ Skills in Environmental Barrier Coating (EBC) ▪ Skills in neutron or x-ray beamline experiments ▪ Skills in writing bids for research grants
Knowledge and experience	<ul style="list-style-type: none"> ▪ Experience of publication of academic journal papers ▪ Demonstrated creativity and leadership in problem solving 	<ul style="list-style-type: none"> ▪ Experience of presenting at international conferences ▪ Experience of research proposal writing ▪ Previous experience within collaborative projects
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> ▪ PhD (or equivalent) in an appropriate field (e.g. ceramics or surface engineering or thermal/environmental barrier coating) 	<ul style="list-style-type: none"> ▪ PhD (or equivalent) in Suspension Plasma Spray (SPS)



The University strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women's careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.
- Taking ownership** Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.
- Forward thinking** Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
- Professional pride** Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.
- Always inclusive** Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

Key relationships with others

