University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Fellow in Suspension Plasma Spray (SPS) for TBC Repair	Job family and level	Research and Teaching Level 4
School/ Department	Faculty of Engineering – Rolls-Royce UTC in manufacturing and on-wing repair	Location	Rolls-Royce UTC, Jubilee Campus

Purpose of role

As part of a research team, the successful candidate will perform research and provide support to the wider team aimed at developing the next generation of repair technologies using Suspension Plasma Spray (SPS) for Thermal Barrier Coatings (TBCs). The candidate will be developing process parameter windows, repair protocol, miniaturisation strategies, sample characterisation using advanced in-situ electron microscopy, mechanical testing, thermal cycling and burner rig. It is expected that the role-holder will undertake supervision of 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 process parameter windows, repair protocol, miniaturisation strategies, sample characterisation using advanced in-situ electron microscopy, mechanical testing, thermal cycling and burner rig testing. You will be developing guidelines for the next generation of in-situ TBC repair.	50%
2	Supporting the project leader and the research team within this collaborative project. This will consist of: preparing plans, deliverables, templates, keeping risk and change register, organising meetings, keeping communication with the project partners, contributing to the intellectual properties, including interaction with other early stage researchers, participation in meetings and discussions and online activity. Support other research strands within REINSTATE project when required.	15%
3	Production of reports and publications, dissemination of results - presentations and travel to meetings and/or outreach to the industry, scientific community	15%
4	Research Supervision. As a member of the research group, supervise postgraduate students, regularly liaising with researchers and other students in the team. Responsible for training of new researchers and support in ensuring that project objectives are achieved.	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	• Skills in broader Suspension Plasma Spray (SPS) • Skills in Thermal Barrier Coating (TBC) • Excellent communication and presentation skills • Strong organisational skills and project management to coorindate with the supply chain • Excellence at writing in the English language • Well organised and self-motivated, able to work independently and as part of a team	• Skills in process parameter development in thermal spray • Skills in equipment design and modification using CAD and CAE • Laboratory skills in Metallography sample preparation • Skills in SEM and XRD • Skills in designing and operating pilot scale high temperature burner rigs. • Skills in writing bids for research grants
Knowledge and experience	• Experience of publication of academic journal papers • Experience of presenting at international conferences • Demonstrated creativity and leadership in problem solving • Significant demonstrated ability of team work	• Experience of research proposal writing • Previous experience within collaborative industrial projects • Experience with liaising with external partners
Qualifications, certification and training (relevant to role)	• PhD (or equivalent) in an appropriate field (e.g. surface engineering and coatings technology and/or thermal barrier coating)	• PhD (or equivalent) in Suspension Plasma Spray (SPS)

Athena SWAN Silver Award

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