University of Nottingham
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Role profile

Job title	Experimental Research Fellow (Mechanical and Aerospace Systems)	Job family and level	R&T Level 4
School/ Department	Faculty of Engineering, MAS	Location	Jubilee Campus

Purpose of role

The Mechanical and Aerospace Systems Research Group (MAS) requires an Experimental Research Fellow who is experienced in the field of multiphase computational fluid mechanics and aero-engine oil systems to work across several industry relevant projects. MAS has a large intra-disciplinary team of researchers, engineers, technicians, support staff and academics who work together to deliver research from fundamental to high level TRL.

The researcher will design, conduct, analyse and disseminate computational work in the field of multiphase flows for aero-engine oil systems. To achieve this the successful candidate should be able to demonstrate capability in the application of a range of multiphase flow modelling techniques to challenges in the aerospace industry.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	**Research Activities** • Lead and perform high quality research as part of a collaborative team that contributes to the achievements of the research objectives of MAS. ▪ Coordinate, in collaboration with academic staff and researchers, experimental and analytical activities across a variety of multiphase fluid mechanics relevant projects. ▪ Collaborate with academic staff to assist in developing group level fluid mechanics strategy and explore funding opportunities. ▪ Resolve problems for self and other researchers on the project to meet research objective and deadlines, escalating any issues effectively to senior colleagues.	70%
2	**Stakeholder Liaison** ▪ Regular formal and informal liaison will be required with stakeholders, both internal and external to the group and university. ▪ Responsible handling of commercially confidential data will be required, including managing the secure electronic storage of this data. ▪ Liaison and monitoring of project milestones/deliverables.	10%
3	**Reporting**	15%

	▪ Attendance at meetings with presentation to internal and external stakeholders. ▪ Creation of written reports for internal and external stakeholders ▪ Dissemination activities, paper publication.	
4	**Group Collaboration** • Researchers within the group are expected to contribute to internal seminar and training activities, by attending and where appropriate presenting. • Participation in collaborative activities to further enhance group cohesion and development of new proposals/publications	5%

Person specification

	Essential	Desirable
Skills	• Ability to independently manage both technical and project workload, proactively alerting line manager of issues, with suggestion of potential resolution routes. • Ability to liaise with a wide range of internal and external stakeholders including, but not limited to, industrial technical specialists, experimental researchers, engineering and technicians, project managers, academic staff. • Able to present complex data clearly to a wide audience to show analysis and outcomes. • Identify opportunities for research development and, working with academic staff, contribute to the creation of funding applications.	▪ Project management skills ▪ Good documentation practice for all work, especially relating to computer coding. ▪ Active participation in meetings, recording of meeting information and creation of actions from meetings. ▪ Experience in technical report writing for a specialist audience.
Knowledge and experience	▪ Ability to use programming software (particularly Matlab and Python languages) and manage large data sets for the analysis of experimental results. ▪ Experience in the design of experimental multiphase fluid mechanics problems. ▪ Demonstrable experience in uncertainty estimation and error quantification. ▪ Experience and understanding of modelling multiphase flows. ▪ Understanding of experimental techniques used for CFD validation, e.g PIV. ▪ Experience in having developed and/or adhered to strict safety systems.	▪ Good understanding of multiphase fluid mechanics and how these can be utilized across a range of applications. ▪ Ability to work independently within a wider team of researchers/engineers on a technical project and contributing to the timely delivery of project outputs.
Qualifications, certification and training (relevant to role)	▪ Degree in a subject relevant to mechanical engineering ▪ A PhD (or close to completion) in engineering, applied mathematics or a related subject area, with a major component using Computational Fluid Dynamics.	

The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

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