Imperial College London

Job Description

Job Title:	Research Assistant / Associate in Hypersonic Aerodynamics
Department/Division/Faculty:	Aeronautics, Faculty of Engineering
Campus location:	South Kensington
Job Family/Level:	Research Job Family, Research Assistant or Research Associate* (Research salary scale)
Responsible to:	Dr Paul Bruce
Key Working Relationships (internal):	Dr George Rigas and other PhD/PDRA members of the high-speed aerodynamics research group
Key Working Relationships (external):	N/A
Contract type:	Fixed term until 3rd May 2024

Purpose of the Post

The post is funded by QinetiQ to investigate a novel concept for the passive control of hypersonic boundary layer transition.

The appointed Research Associate or Assistant will carry out computational research in the field of hypersonic aerodynamics, to explore the complex flow physics of hypersonic boundary layer transition and support and complement the activities of other researchers undertaking related (experimental) research.

Key Responsibilities

Main Duties:

- Characterise the efficacy of a novel aerodynamic surface for controlling hypersonic boundary layer transition through numerical simulations
- Identify and develop suitable techniques for the collection and analysis of data
- Acquire, analyse and validate data from numerical simulations
- Maintain accurate and complete records of all findings
- Assist with the writing of reports to research sponsors
- Present findings to peers and colleagues
- Provide advice to other staff and students
- Assist with the publication of findings
- Attend relevant workshops and conferences as necessary
- Develop contacts within the College and the wider community
- Promote the reputation of the Group, the Department and the College

In addition, at Research Associate level:

- Take initiatives in the planning of research
- Direct the work of small research teams
- Write reports for submission to research sponsors
- Submit publications to refereed journals
- Provide guidance to staff and students
- Provide guidance to PhD Students
- Contribute to bids for research grants

- Conduct and plan own scientific work with appropriate supervision.
- Maintain highly organised and accurate record of experimental Work.
- Actively participate in the research programme of the Group
- Publish in high quality journals and to present data at national and international meetings.
- Participate in Group research meetings and internal seminars.
- Collaborate with other allied scientists within Imperial College and elsewhere in London and abroad, as appropriate.
- Contribute to the smooth running of the Group's laboratories and, facilities with other scientists, clinicians, technicians, and students within the laboratories.
- Assist in the supervision of undergraduate and postgraduate research students and research assistants as required.

Where Imperial or funder conditions necessitate, you will be required to complete timesheets for your work on projects in a timely manner.

Other Duties

- Undertake any necessary training and/or development
- Undertake appropriate administration tasks
- Attend relevant meetings

Person Specification

Requirements Candidates/post holders will be expected to demonstrate the following:	**Essential (E)/ Desirable (D)**
Education	
Those appointed at Research Associate level Hold a PhD (or equivalent) in Aerospace Engineering or a closely related discipline. **Those appointed at Research Assistant level** A first / masters degree (or equivalent) Aerospace Engineering or a closely related discipline. or equivalent research, industrial or commercial experience *Candidates who have not yet been officially awarded their PhD will be appointed as a Research Assistant.	E
Experience	
Practical experience within a research environment and / or publication in relevant and refereed journals	E
Experience of dealing with project sponsors and industrial contacts	E (Associate)
Practical experience in the application and development of a range of techniques for computational fluid dynamics (including direct numerical simulation)	E
Knowledge	
Knowledge of hypersonic aerodynamics and boundary layer stability theory	E
Knowledge of research methods and statistical procedures	E
Skills & Abilities	
Ability to conduct a detailed review of recent literature	E
Ability to develop and apply new concepts	E
Creative approach to problem-solving	E

Excellent verbal communication skills and the ability to deal with a wide range of people	E
Excellent written communication skills and the ability to write clearly and succinctly for publication	E
Ability to organise own work with minimal supervision	E
Ability to prioritise own work in response to deadlines	E
Advanced computer skills, including word-processing, spreadsheets and the Internet	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E (Associate)
Other	
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to undertake any necessary training for the role	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences	E
Willingness to work out of normal working hours (including weekends) if the requirements of the project demand	E

Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the Imperial Values & Behaviours framework. Our values are:

- Respect
- Collaboration
- Excellence
- Integrity
- Innovation

Employees are also required to comply with all College policies and regulations paying special attention to: Confidentiality, Conflict of Interest, Data Protection, Equal Opportunities, Financial Regulations, Health and Safety, Information Technology, Smoking, Private Engagements and Register of Interests. They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the College Website Health and Safety Structure and Responsibilities page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes which are ultimately aimed towards finding new treatments and making scientific and medical advances, and where there are no satisfactory or reasonably practical alternatives to their use. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care

are treated with full respect, and that all staff involved with this work show due consideration at every level. Find out more about animal research at Imperial.

We are committed to equality of opportunity, to eliminating discrimination and to creating an inclusive working environment for all. We therefore encourage candidates to apply irrespective of age, disability, marriage or civil partnership status, pregnancy or maternity, race, religion and belief, gender identity, sex, or sexual orientation. We are an Athena SWAN Silver Award winner, a Disability Confident Leader and a Stonewall Diversity Champion.