

**Job Description**

<b>Job Title:</b>	Research Associate
<b>Department/Division/Faculty:</b>	Department of Civil and Environmental Engineering, Faculty of Engineering
<b>Campus location:</b>	South Kensington
<b>Job Family/Level</b>	Research, Research Associate
<b>Responsible to:</b>	Dr Emilio Martinez-Paneda
<b>Line Management responsibility for:</b>	N/A
<b>Key Working Relationships (internal):</b>	Dr Emilio Martinez-Paneda
<b>Contract type:</b>	Full time, fixed term

**Purpose of the Post**

Deliver the research of the EPSRC-funded project NanoHMAT (EP/V04902X/1, Nanovoids for Developing New Hydrogen-resistant Materials). The project aims at exploring high-risk high-gain approaches for developing a new generation of hydrogen embrittlement-resistant materials. The work is done in collaboration with the University of Washington (Prof. Lucas Meza) and the Center for Electrochemical Science and Engineering at the University of Virginia (Prof. James Burns, Dr Zachary Harris).

**Key Responsibilities**

The appointed Research Associate will be responsible for conducting a wide variety of experimental tasks, including (but not limited to) mechanical testing, hydrogen electro-permeation, electrochemical charging, thermal desorption spectroscopy (TDS), SEM and XCT characterisation, and various nanofabrication tasks. The Research Associate will also be expected to take part in collaborative work, take part in the activities of the research group, submit publications to reputed journals and liaise with academic collaborators and sponsors.

**Research Duties:**

- Conduct mechanical and electrochemical experiments to gain insight into material-hydrogen interactions.
- Attend project meetings and interact frequently with collaborators and sponsors
- Write and submit journal publications
- Supervise undergraduate, MSc and PhD students working on the project
- Conduct theoretical and/or numerical analysis to assist in interpreting the data

**Other Duties:**

- Attend group meetings
- Attend seminars organised by the group

Person Specification	
Requirements	Essential (E)/ Desirable (D)
Candidates/post holders will be expected to demonstrate the following	
<b>Education</b>	
<b>Research Assistant:</b> Near completion of a PhD (or equivalent) in Materials Science, Mechanics of Materials or a related subject	E
<b>Research Associate:</b> Hold a PhD (or equivalent) in Materials Science, Mechanics of Materials or a related subject	E
<b>Experience</b>	
Experience in mechanical testing	D
Experience in environmentally assisted fracture testing	D
Experience in temperature-programmed hydrogen desorption	D
Experience in materials characterisation	D
Experience in nanofabrication	D
Experience in coupled deformation-diffusion modelling	D
Practical experience within a research environment and / or publication in relevant and refereed journals	E
Experience of dealing with sponsors and academic and industrial collaborators, and end-users	D
<b>Knowledge</b>	
Knowledge in Materials Science	D
Knowledge in mechanics of materials	D
Knowledge of hydrogen embrittlement	D
Knowledge of Nanomechanics	D
<b>Skills &amp; Abilities</b>	
Experimental testing	E
Finite element analysis	D
Writing scientific papers and reports of high quality	D
Ability to conduct a detailed review of recent literature	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, and ability to prioritise own work in response to deadlines	E
Willingness to work as part of a team and to be open-minded and cooperative both internally and with external project partners	E
<b>Other</b>	
Discipline and strong 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 UK and abroad to conduct collaborative research and attend conferences.	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 [7 Imperial Expectations](#) detailed below:

- 1) Champion a positive approach to change and opportunity

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- 2) Encourage inclusive participation and eliminate discrimination
- 3) Communicate regularly and effectively within and across teams
- 4) Consider the thoughts and expectations of others
- 5) Deliver positive outcomes
- 6) Develop and grow skills and expertise
- 7) Work in a planned and managed way

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 where their use is shown to be necessary for developing new treatments and making medical advances. 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.

<http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research/>

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and work in partnership with GIRES to promote respect for trans people.

**November 2020**