



University of Liverpool

POSTDOCTORAL RESEARCH ASSOCIATE IN COMPUTATIONAL MODELLING OF ATMOSPHERIC PRESSURE PLASMA

Job Ref: 012052

Faculty: Science and Engineering, Department of Electrical Engineering and Electronics

Location: University Campus

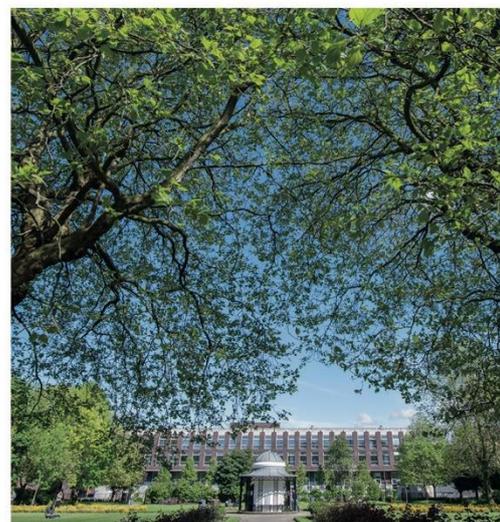
Grade: 7

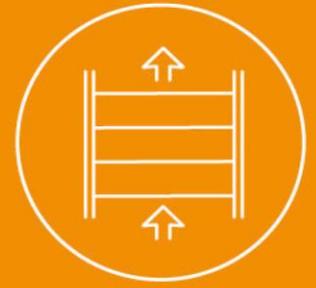
Salary: £34,188 - £39,610 pa

Hours of Work: Full-Time

Tenure: 30 months

Shortlisting and interview arrangements are the responsibility of the recruiting Department. Please contact Dr Mohammad Hasan, email: mihasan@liverpool.ac.uk for all enquiries.





.....
UK leader
in social mobility.



.....
Russell Group
Member of the Russell Group.



.....
At the forefront of
innovation and discovery.



.....
Nobel Laureates
Associated with nine Nobel Laureates.



.....
Investing
in our campus.

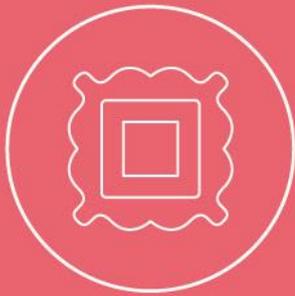


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Global links



Affordable

Based in the 2nd most affordable UK city.



More galleries and museums than any UK city outside of London.



Birthplace of The Beatles and home to two Premier League Football clubs.



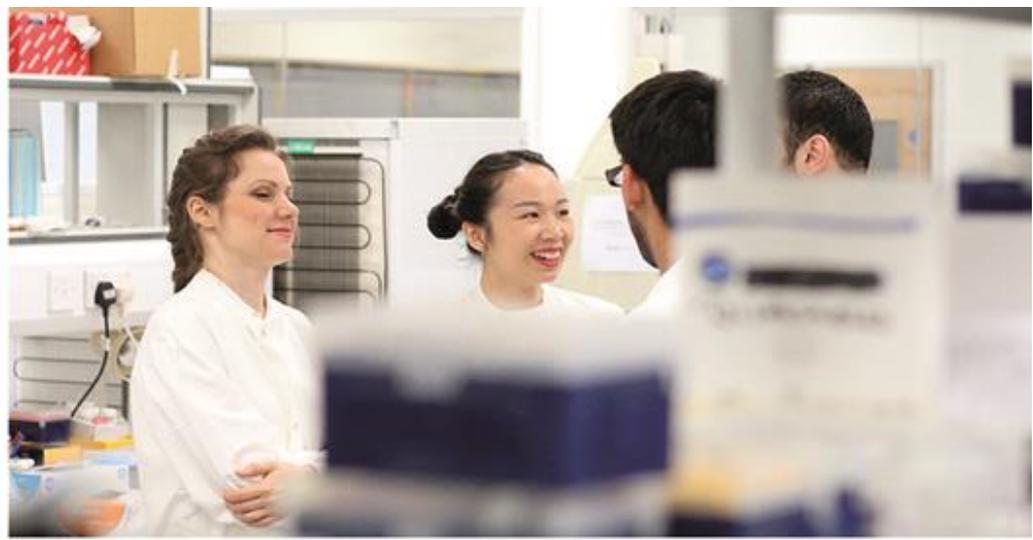
33,000

33,000 students, 7,500 of whom travel from all over the world to study here.





Job Role



THE CENTRE FOR PLASMA MICROBIOLOGY

Through a recently awarded EPSRC project the Technological Plasmas group at the University of Liverpool have established an ambitious new research centre in the area of plasma microbiology. This activity brings together leading physicists, engineers and microbiologists to tackle global challenges associated with the microbial colonisation of surfaces, liquids and air flows. The research is an extremely diverse and multidisciplinary with a primary focus on the use of cold atmospheric pressure plasma, which has a broad scope for application in areas such as food security, environmental remediation and healthcare.

Members of the centre have a broad scope of interests ranging from the modelling of fundamental processes within plasma right through to the application of cold plasma on an industrial scale. The centre is equipped with a wealth of cutting edge diagnostic equipment, including Particle Imaging Velocimetry, fluorescence microscopy, Fourier Transform Infrared spectroscopy, optical emission spectroscopy and Raman spectroscopy. The centre also houses a containment level 2 microbiology which is fully furnished with a diagnostic equipment and plasma generation apparatus.

Beyond the Centre for Plasma Microbiology, the Technological Plasma group at the University of Liverpool is internationally respected for research in to all facets of low-temperature plasma science. The group has a wealth of research projects funded by RCUK, InnovateUK and UK industry and has grown to include 7 academic members of staff, numerous postdoctoral research associates and over 20 current PhD students.

POST

We are seeking to recruit a Postdoctoral Research Associate for an EPSRC funded project to develop a computational model for pulsed atmospheric pressure discharges. The successful candidate will work with Dr Mohammad Hasan to develop the model and to validate it experimentally in collaboration with partners at the University of York.

The role will involve the development of a computation model coupling electron kinetic effects to conventional plasma fluid model, following a large set of generated reactive species, and use this model to study the influence of different shaped waveforms on the resultant species densities. Previous experience in numerical solution of partial differential equations is essential and an experience in modelling low temperature plasma is highly desirable

You must have (or be about to receive) a PhD in Plasma Science, numerical modelling or a closely related field with direct experience in the development of numerical solution of partial differential equations. It is highly desirable that the candidate have prior knowledge of non-equilibrium gas discharges. The candidate will need to demonstrate an understanding of the concepts of numerical methods. Experience in atmospheric pressure plasma modelling would be a distinct advantage but is not a prerequisite.

This post is available for 30 months and will provide an exciting opportunity to gain experience in the development of an advanced plasma power source.

You will work synergistically with two other PDRA's appointed on the project with expertise in plasma diagnostics and pulsed-power supplies development, providing an opportunity to gain new skills and knowledge in the area of atmospheric pressure plasma science.

BACKGROUND: THE SCHOOL AND DEPARTMENT

The Department of Electrical Engineering and Electronics forms a new School with the Department of Computer Science. The School brings together complementary teaching and research activities of both Departments. There are significant opportunities to develop career aspirations within the School and to support the School's research and teaching agendas.

PERSON SPECIFICATION

Essential Criteria

Desirable Criteria

(Identified from – Application form, CV, Supporting Statement, Interview, References)

Experience

1.1	Good research background with relevant journal publications	Experience in low temperature plasma modelling
1.2	Previous research work involving numerical solution of coupled partial differential equations, with a focus on reactive flow modelling	Proven record publishing in high-quality journals
1.3		Experience working in large consortia with researchers from different backgrounds

Education, Qualifications and Training

2.1	A PhD (or soon to receive one) in Plasma Science, Chemical engineering or mechanical engineering (or closely related subject)	
2.2	First degree in a science-based subject	

Skills, General and Special Knowledge

3.1	Proven experience in programming	Good knowledge of atmospheric pressure plasma
3.2	Excellent verbal and written communication skill	
3.3	Team working (collaboration) skills	

Personal Attributes and Circumstances

4.1	Self-motivated	Be prepared to travel within the UK and internationally to interact with academic / industrial collaborators
4.2	Well organised	Full driving license

Exposure to Animals

As an applicant for a post which involves work in animal houses and/or handling animals, you should be aware that:

- There is a possibility that you may develop an allergy to the animals you are in contact with. The risk is substantially reduced if correct working practices are used and protective clothing is worn.
- Milder cases may be controlled by the use of protective clothing or medication and some people who are affected are able to continue working with animals.

The appointee will be required to complete a health screening questionnaire and clearance from Occupational Health must be received before exposure.

Control of Noise

You will work in an area where noise has been identified as a potential hazard. A system to control the risks is in place. You may be required to wear hearing protection or to undergo checks on your hearing. Appointment will be subject to Occupational Health screening and clearance must be received before exposure.

Control of Vibration

You will work in an area where vibration has been identified as a potential hazard. A system to control the risks is in place. You may be required to limit work with vibration machinery or to undergo health checks. Appointment will be subject to Occupational Health screening and clearance must be received before exposure.

DBS

As the work involves working with young people and / or vulnerable adults, the successful candidate will be asked to make a Disclosure & Barring Service check.



How to Apply



To apply for a Vacancy at the University you must register on the University of Liverpool E-Recruitment site, <https://recruit.liverpool.ac.uk>

If you have any queries relating to applying for a Vacancy please contact the Recruitment team by email – Jobs@liverpool.ac.uk

Acknowledging your application

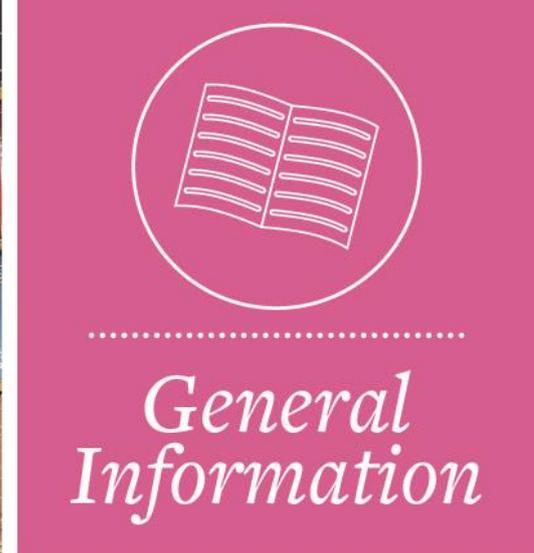
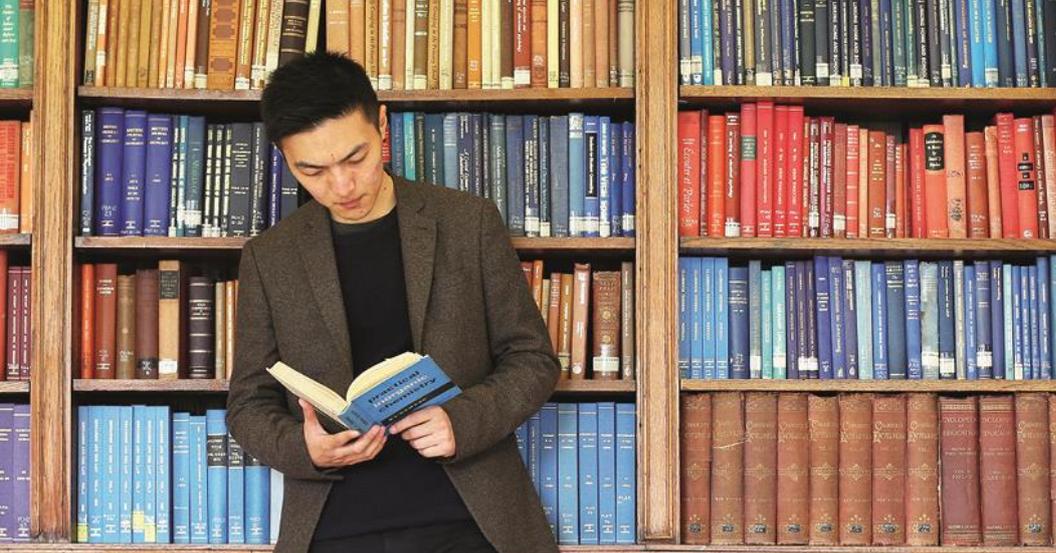
Once you have submitted your application you will receive an automatic acknowledgement. Your application can be viewed at any time in the Application History section of your E-Recruitment Account.

Outcome of applications

Vacancies at the University often attract a large number of candidates and it is not always possible to respond individually to every application. If you have not heard from the recruiting department within 6 weeks after the closing date please take it that your application has not been successful.



Micah
Liverpool



Asylum & Immigration

The University will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Please be aware that you will be required to bring your passport (and visa if applicable) to interview so that it can be copied and verified by a member of the Selection Panel. For posts requiring a recognised degree level or equivalent qualification, and where there is no suitable UK or European Economic Area candidate, the University will take the necessary steps to secure UK Border Agency permission for a foreign national to take up employment.

Should a candidate require a Certificate of Sponsorship in order to take up a post they will need to meet the UK Border Agency Tier 2 Points Based Criteria. A self assessment tool can be found on the UK Border Agency website at: www.ukba.homeoffice.gov.uk/pointscalculator

A candidate may also be required to undertake an English Language test prior to commencing work at the University. Details of Home Office approved tests can be found at: <https://www.gov.uk/government/publications/guidance-on-applying-for-uk-visa-approved-english-language-tests>. Further information on the eligibility criteria for Certificates of Sponsorship can be found at: www.ukba.homeoffice.gov.uk/employers/points

National Insurance Number

All employed individuals must possess a UK National Insurance Number. Further information and how to apply for a unique National Insurance Number can be found at: <https://www.gov.uk/apply-national-insurance-number>

Diversity and Equality

The University of Liverpool is committed to diversity and equality of opportunity. All employees and applicants for jobs will be considered on their abilities and will not be discriminated against on the grounds of age, caring responsibilities, colour, disability, employment status, gender, gender identity, marital status, nationality, race or ethnic origin, religion or belief, sexual orientation, socio-economic status or any other irrelevant distinction. Training is available to support career progression within the University.

Two Ticks Disability: Guaranteed Interview Scheme (GIS)

The University of Liverpool is committed to the employment of disabled people, and as part of our commitment, we guarantee to interview all disabled applicants who meet the essential criteria for a post and consider them on their abilities. If your disability prevents you completing the application form by the specified closing date, or when the vacancy closes early, due to a high volume of applications, please call the Recruitment Team to discuss alternative arrangements. <http://www.liv.ac.uk/working/jobvacancies/guaranteedinterviewscheme/>

Micah Liverpool Programme

The University of Liverpool supports the Liverpool Anglican Cathedral Micah Liverpool Programme. Applicants who have successfully completed the programme and meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the Micah Liverpool Programme directly. <http://www.liverpoolcathedral.org.uk/home/micah-liverpool.aspx>

GiveGetGo Volunteer Programme

Applicants who have successfully completed the GiveGetGo Volunteer Programme at the University in Partnership with the Transform Lives Company who meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the GiveGetGo Volunteer Programme directly.

<https://www.liverpool.ac.uk/working/jobvacancies/givegetgo/>

Accessibility

If you require copies of documentation in alternative formats, for example, large print or Braille, please contact jobs@liverpool.ac.uk or telephone 0151 794 6771.

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University of Liverpool, please let us know by contacting jobs@liverpool.ac.uk or telephone 0151 794 6771.

Pension

Information about The Occupational Pension Scheme associated with this appointment can be found [here](#). You are encouraged to familiarise yourself with the full particulars of the scheme.