

Postdoctoral Research Associate in AI Enhanced Clean Water Technology



OPPORTUNITY

Where change gets real.



Reference: 0577-26

Grade: 8

Salary: £38,784 £46,049, per annum, depending on experience

Contract Type: Fixed term (36 months with potential to extend to 48 months)

Basis: Full time

Job Purpose:

Aston University is seeking a highly motivated Postdoctoral Research Associate to contribute to innovative research at the intersection of molecular engineering and materials science particularly as it appertains to clean water reuse, desalination and the associated enabling technologies. The successful candidate will join the research laboratory of Professor Jun Jie Wu and benefit from relevant links to Research Centres.

The Associate is expected to generate breakthrough ideas in the assigned area of research, as well as to carry out research in line with the project plan.

The successful candidate will conduct hands-on empirical research that embraces both experiments and modelling and be responsible for three strands of research (i) using industrial data (and working with industry) to model year-long module performance in the water industry; (ii) exploring whether machine learning, couple with transport informed models can be used to predict membrane fouling for specific applications such as oily-water purification or protein purification; and (iii) developing a road map for major extensions to water reuse, based in part upon elements of a digital twin.

Previous experience could include innovative membrane module design, water purification and/or artificial intelligence driven approaches for urban water management. However, the research programme can, in part, be tailored to prior expertise. Working closely with academic colleagues and external partners, you will contribute to the production of high-quality analytical outputs; publish results in leading journals; and support supervision of student research projects. The postholder will have substantial ownership over one or more core research thrusts within Wu laboratory's overall programme.

We are looking for a researcher with a PhD in engineering, or a related physical science discipline, preferably with expertise in water treatment and/or membrane separation. You should possess a strong track record of research outputs appropriate to career stage; strong empirical research skills; a mindset for modelling; and excellent communication and collaboration skills with a commitment to an inclusive, respectful research environment.

Main Duties/Responsibilities

- ▶ Conduct high-quality research to investigate, develop and design selected technologies contributing to potable water reuse.
- ▶ Produce high quality reports and insights on water reuse trends for industry and policy audiences engaging with national and international stakeholders to co-produce insights, validate findings and influence strategy for adoption.
- ▶ Evaluate the possibility of applying artificial intelligence and machine learning to the management of water reuse.
- ▶ Disseminate findings through peer-reviewed publications, workshops, and conferences
- ▶ Contribute to project management, reporting and deliverables.
- ▶ To support the development of further high quality research proposals.
- ▶ To undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

Additional responsibilities

- ▶ Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities.
- ▶ Ensure and promote the personal health, safety and wellbeing of staff and students.
- ▶ Carry out duties in a way which promotes fairness in all matters and which engenders trust.
- ▶ Promote equality of opportunity and support diversity and inclusion as well as working to support the University's environmental sustainability agenda and practices.

Person specification



	Essential	Method of assessment
Education and qualifications	A PhD in engineering, or a related relevant discipline.	Application form and interview
Experience	<p>Proven experience of initiating and conducting research at doctoral level in an area relevant to water treatment and/or membrane separations.</p> <p>Experience of producing papers, posters, reports, presenting at seminars, conferences etc.</p> <p>Experience of positive collaboration within and outside of candidate's immediate research team.</p> <p>Experience conducting high-quality research to investigate, developing and designing selected technologies contributing to potable water reuse.</p> <p>Experience contributing to project management, reporting and deliverables.</p>	Application form and interview.
Aptitude and skills	<p>Ability to present data in both a clear and concise manner that is visually appealing.</p> <p>Possess a mindset for modelling</p> <p>Ability to prepare written communications to a high standard.</p> <p>Ability to develop and maintain a research programme and to publish in high quality publications.</p> <p>A willingness to undertake further training as appropriate and to adopt</p>	Application form and interview.

	Essential	Method of assessment
	<p>new procedures as and when required.</p> <p>Ability to be innovative and proactive.</p>	

	Desirable	Method of assessment
Education and qualifications	<p>Proven experience of conducting research at post-doctoral level in an area related to water treatment and/or membrane separations.</p> <p>Experience working with academic, industry or policy stakeholders.</p> <p>Practical experience in natural language processing, machine learning or artificial intelligence.</p>	Application form
Experience	Ability to instigate further opportunities from seminal research.	Application form and interview

University values

All staff are expected to demonstrate/promote the University's values and expectations, which are an integral part of our strategy and underpin the culture of the University. In addition, our leaders are expected to be accountable, help to execute strategic visions of the University and share and set clear expectations that inspire those around them.

Values + Behaviours					
	Innovation	Collaboration	Ambition	Inclusion	Integrity
	We strive for excellence within ourselves and others, providing solutions to new and existing challenges.	We work best when we are collaborative, working together to contribute to the Aston community.	We strive together for improvement and innovation looking ahead to see the bigger picture.	We treat everyone in our community equally and how they would like to be treated.	We are open, honest and fair. We take ownership of the way we work and how we treat each other.

How to apply

You can apply for this role online via our website <https://www2.aston.ac.uk/staff-public/hr/jobs>.

Applications should be submitted by 23.59 on the advertised closing date.

All applicants must complete an application form, along with your CV.

Any CV sent direct to the Recruitment Team and Recruiting Manager will not be accepted.

If you require a manual application form, then please contact the Recruitment Team via recruitment@aston.ac.uk.

Contact information

Enquiries about the vacancy:

Name: Professor Jun Jie Wu

Job Title: Chair Professor in Engineering Science and Deputy Pro Vice-Chancellor,
Research and Enterprise

Email: junjie.wu@aston.ac.uk

Enquiries about the application process, shortlisting or interviews:

Recruitment Team via recruitment@aston.ac.uk or 0121 204 4500.

Additional information

Visit our website <https://www2.aston.ac.uk/staff-public/hr> for full details of our salary scales and benefits Aston University staff enjoy.

Salary scales: <https://www2.aston.ac.uk/staff-public/hr/payroll-and-pensions/salary-scales/index>

Benefits: [Benefits and Rewards | Aston University](#)

Working in Birmingham: <https://www2.aston.ac.uk/birmingham>

Employment of Ex-Offenders: Under the Rehabilitation of Offenders Act 1974, a person with a criminal record is not required to disclose any spent convictions unless the positions they applying for is listed an exception under the act.

Eligibility to work in the UK: Where an individual is subject to UK immigration control, they will require a visa to work in the UK.

The following individuals do not need a visa for the UK, but do still have to prove their right to work before employment can commence:

- **British Citizens or Irish Nationals**
- **EU/EEA/Swiss nationals with Settled or Pre-settled status under the EU Settlement Scheme**
- **Non-EEA nationals with Indefinite Leave to Remain/Settlement in the UK**

The main routes available for those who need a visa to work in the UK are **Skilled Worker**, **Global Talent** and the **Graduate Route**.

Please see UKVI guidance for further information on eligibility, knowledge of English requirements and approved test centres <https://www.gov.uk/skilled-worker-visa> You can also find further information on our candidate immigration [web page](#).

If you will conduct research in your role, you may need to apply for and obtain ATAS clearance before Aston can issue a Certificate of Sponsorship for your visa application. Please see our candidate immigration [web page](#) for further details.

Before you start and Right to Work

Right to Work Check

All employees must complete a Right to Work check before they commence work at Aston. HR will contact you during the onboarding process to arrange your check.

Cost of Living - Estate and Letting Agents

There are numerous Estate and Letting Agents that can help you find suitable accommodation. Useful websites for support and guidance

<https://www.gov.uk/government/publications/how-to-rent/how-to-rent-the-checklist-for-renting-in-england> and <https://www.citizensadvice.org.uk/housing/>

You can also use property search websites such as Rightmove or Zoopla.

Equal Opportunities

Aston University promotes equality and diversity in all aspects of its work. We aim to ensure, through our admissions policies for students, and our staff recruitment and selection processes that we encourage applications from all groups represented in the wider community at a local, national and international level.

The University will endeavour not to discriminate unfairly or illegally, directly or indirectly, against student or potential students, staff or potential staff. This commitment applies to all functions of the University and to any stage of an individual's career.

An Equal Opportunities Monitoring Form is included within the application form. Data you provide on the Equal Opportunities Monitoring Form will be included in a general database, for statistical monitoring purposes, enabling the University to monitor the effectiveness of its Policy, Codes of Practice and Guidelines on Equal Opportunities in Employment.

Individuals will not be identified by name.

Data Protection

Your personal data will be processed in compliance with the Data Protection Act 2018 and the General Data Protection Regulation ((EU) 2016/679) ("GDPR"). The University's Data Protection Policy and Privacy Notices, including the Job Applicant Privacy Notice can be found at <https://www2.aston.ac.uk/data-protection>. Your application will only be used to inform the selection process, unless you are successful, in which case it will form the basis of your personal record with the University which will be stored in manual and/or electronic files. Information in statistical form on present and former employees is given to appropriate outside bodies.

Full details of our terms and conditions of service and associated policies and procedures are available online at <https://www2.aston.ac.uk/staff-public/hr/policies>

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