



OPPORTUNITY

Postdoctoral Research Associate

Reference: 0397-23

Grade: 8

Salary: £36,333 to £43,155 per annum, depending on experience

Contract Type: Fixed Term

Basis: Fixed Term (31/03/2025)

Job description

Job Purpose:

Aston University has been recently awarded a collaborative project led by Connected Places Catapult, and partnered by local universities, Birmingham City Council and the Birmingham Chambers of Commerce and Industry. Subcontractors in the project include West Midlands Growth Company and The Business of Cities. The project, DIATOMIC (Digital InnovAtion TransfOrMative Change), is an interdisciplinary cross-cutting framework for building the innovation capability and capacity to drive growth and prosperity locally and enhance the reputation of the West Midlands globally.

The components of the project include:

- a digital twin to drive data
- innovation in procurement to drive city challenges to SMEs
- enabling new solutions around Health Tech, Clean Tech and Med Tech with an inclusive innovation network to ensure all people organisations and communities can contribute and take part in these challenges
- a global innovation twin, pairing cities and investors to invest in the region.

Aston's task on this project is to develop a Digital Twin (DT) of Hydrogen Fuel Cell in Electric Vehicles to facilitate the life cycle management of fuel cells, particularly their maintenance, remanufacture and reuse. It will first develop a digital twin framework, which includes designing the system concept of the DT, scoping the project, defining stakeholders, data requirements and data structure, and designing data sharing protocols. The 2nd part of this task is to develop a digital twin model of fuel cells to predict the remaining useful life (RUL), which includes data collection, data analytics and machine learning. Lastly the task will implement the Digital Twin model of fuel cells based on the DT platform to be developed in parallel on this project.

The tasks on this post are expected to include (not limited to) DT platform architecture design, specification and requirements development, review and evaluation of commercial DT platform solutions in collaboration with partners, Data collection and analytics to predict the RUL of fuel cells, develop algorithm to plan and optimise maintenance activities, test and demonstration of DT model on the developed DT platform.

Main duties and responsibilities

- ▶ Work with project partners and Aston academic team on DIATOMIC project to develop the digital twin platform for Hydrogen fuel cells used for Electric Vehicles.
- ▶ Develop Digital Twin model for the fuel cells
- ▶ Implement the DT model on the DT platform.
- ▶ Manage, perform and deliver the project at high standard and on time.
- ▶ Lead the research, manage and cooperate with other researchers on the project.
- ▶ Be responsible for project planning, implementation, delivering and overall project management.
- ▶ Attend project meetings, liaise and collaborate with partners on cooperative tasks.
- ▶ Disseminate research project via journal and conference publications, presenting at seminars and medias.
- ▶ Maintain regular progress and produce intermediate and final project report.

External engagement

- ▶ To represent the interests of the subject and School via activities to raise the regional, national and international profile, particularly with the professions, schools and businesses.
- ▶ To forge relationships with the professional bodies and other bodies representing relevant professional interests.

Additional responsibilities

- ▶ Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities to develop themselves and support the development of others.
- ▶ 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	PhD in Manufacturing Informatics, Digital Manufacturing, Asset management, Industry Engineering, Computer Science, Software Engineering, System Engineering, Internet of things, or other relevant fields.	Application form
Experience	<p>Experience or knowledge on Machine learning, Condition Monitoring, Reliability, Life Cycle Engineering and IT system development.</p> <p>Experience and track record of producing high quality research publications.</p> <p>Experience of project management and report writing.</p>	Application form, interview and presentation
Aptitude and skills	<p>Strong project planning & management skills.</p> <p>Good communication and inter-personal skills.</p> <p>Ability to present data in both a clear and concise manner that is visually appealing.</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>Ability to harness IT as a research and teaching tool</p> <p>A willingness to undertake further training as appropriate and to adopt new procedures as and when required.</p>	Application form, interview and presentation

	Desirable	Method of assessment
Education and qualifications	PhD in fuel cells Digital Twin development.	Application form
Experience	<p>Digital Twin system and platform development based on commercial platform and system solutions.</p> <p>Application of machine learning and data analytics in relevant fields.</p> <p>Strong in mathematics and optimisation programming.</p>	Application form, interview and presentation
Aptitude and skills	Willing to learn new skills and knowledge.	Application form, interview and presentation

How to apply

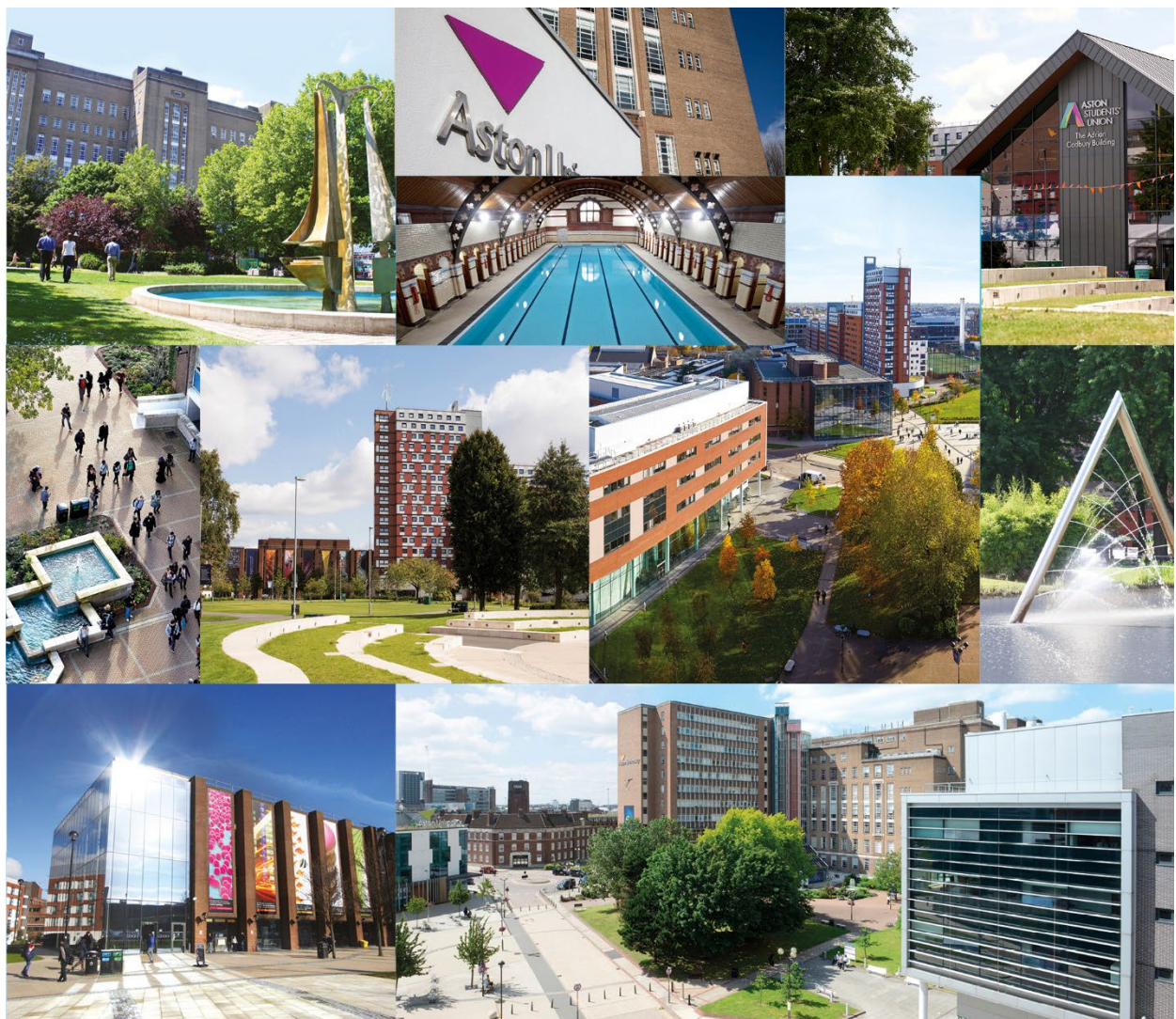
You can apply for this role online via our website <https://www2.aston.ac.uk/staff-public/hr/jobs>.

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 jobs@aston.ac.uk.



Contact information

Enquiries about the vacancy:

Name: Prof Yuchun Xu
Job Title: Chair in Manufacturing
Email: y.xu16@aston.ac.uk

Name: Prof. Tony Clark
Job Title: Professor of Software Engineering and Deputy Dean
Email: tony.clark@aston.ac.uk

Name: Dr Lucy Bastin
Job Title: Reader in Computer Science
Email: l.bastin@aston.ac.uk

Enquiries about the application process, shortlisting or interviews:

Recruitment Team via jobs@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: <https://www2.aston.ac.uk/staff-public/hr/Benefits-and-Rewards/index>

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:

Post-Brexit transition period / EU Settlement Scheme

The post-Brexit transition period ended on 31 December 2020. If you are an EU/EEA citizen and you were a resident in the UK before 31 December 2020, you and your family members (including non-EU citizens need to apply to the EU Settlement Scheme to continue to live, work and study in the UK beyond 30 June 2021. The deadline for applying to the EU settlement scheme is 30 June 2021. You can apply via the Government webpage

<https://www.gov.uk/settled-status-eu-citizens-families>

Irish Nationals do not need to apply for settlement as they retain the right to work in the UK.

New immigration system for EU/EEA and Swiss Nationals who were not resident in the UK before 31 December 2020

A new immigration system has been introduced for people arriving in the UK from EEA countries with effect from 1 January 2021. In addition to those who have always required a visa, EU citizens moving to the UK to work will need to get a visa in advance. You can find more information on the following website. Candidates should check their eligibility to enter or remain in the UK in advance of making any job application via the UKVI website <https://www.gov.uk/browse/visas-immigration/work-visas>. Before applying you should ensure that you meet the requirements, including meeting the English Language requirements. If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful. If you require a visa to work in the UK the most common types of visa are:

Skilled Worker Visa

<https://www.gov.uk/skilled-worker-visa>

Global Talent Visa

If you are a leader or potential leader in one of the following fields you may be eligible to apply for a Global Talent Visa:

- Academia or Research
- Arts and Culture
- Digital Technology

Please click the following link for further information and to check your eligibility for this visa.

<https://www.gov.uk/global-talent>

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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**Where change
gets real.**