

OPPORTUNITY

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gets real.



Reference: 0774-26

Grade: 08

Salary: £41,064 per annum

Contract Type: Fixed Term (60 months)

Basis: Full time

Job description

Job Purpose:

The purpose of this role is to undertake high-quality research within the SmartChar programme, contributing to the development of low-carbon, self-sensing concrete infrastructure. The postholder will focus on investigating and optimising the performance of biochar-enhanced concrete, supporting the generation of robust evidence to inform modelling, lifecycle assessment and real-world application, while working collaboratively with academic and industry partners.

Main Duties and Responsibilities:

Research and Technical Responsibilities:

- Design and conduct experimental studies on biochar-concrete systems, including the development of a wide range of mixes incorporating different biochar types, replacement levels, and additives.
- Investigate early-age behaviour, including workability, shrinkage, hydration, and early strength development.
- Evaluate mechanical performance and durability, including compressive, tensile, and flexural strength under a range of curing and environmental conditions.
- Carry out microstructural and chemical characterisation (e.g. SEM, XRD, FTIR, XRF) to understand hydration mechanisms, porosity, interfacial behaviour, and degradation processes.
- Assess long-term durability and resilience, including performance under accelerated environmental conditions (e.g. freeze–thaw cycles and harsh climates).
- Contribute to the development of performance models and design guidelines for biochar-concrete systems.
- Generate high-quality datasets to support lifecycle assessment, techno-economic analysis, and standards development across the wider programme.

Collaboration and Project Support

- Work collaboratively with academic staff, researchers, and industrial partners across the SmartChar programme.
- Contribute to project meetings, reporting, and coordination activities.
- Support the supervision of PhD students and junior researchers where appropriate.

Dissemination and Impact

- Publish research findings in high-quality peer-reviewed journals.
- Present at national and international conferences.
- Contribute to industry engagement, knowledge transfer, and potential commercialisation activities.

As a part of the 5-years SmartChar programme, the postholder will primarily contribute to their assigned Work Package, and will support cross-cutting activities such as standardisation, policy, engagement and training, as appropriate.

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	A PhD (or near completion) in Civil Engineering, Materials Science, Structural Engineering, or a closely related discipline.	Application form
Experience	<p>Strong background in cementitious materials and concrete technology.</p> <p>Experience in experimental design and laboratory testing of construction materials.</p> <p>Knowledge of mechanical performance and durability assessment of concrete.</p> <p>Experience in analysing and interpreting experimental data.</p> <p>Ability to contribute to academic publications and research dissemination.</p>	Application form and interview
Aptitude and skills	<p>Strong analytical and problem-solving skills.</p> <p>Ability to work independently and as part of a multidisciplinary team.</p> <p>Good communication and organisational skills.</p>	Application form and interview

	Desirable	Method of assessment
Experience	<p>Experience with advanced characterisation techniques (e.g. SEM, XRD, FTIR).</p> <p>Knowledge of low-carbon or alternative cementitious materials (e.g. SCMs, biochar).</p> <p>Experience with sensor integration or data-driven monitoring of materials.</p> <p>Familiarity with durability testing and long-term performance assessment.</p> <p>Experience collaborating with industry or applied research projects.</p>	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 23.59pm 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: Prof Mujib Rahman

Job Title: Head of Civil Engineering

Email: m.rahman19@aston.ac.uk

Name: Dr Abed Alaswad

Job Title: SmartChar PI & Director

Email: a.alaswad@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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