



OPPORTUNITY

Research Associate

Reference: R220792

Grade: 8

Salary: £35,333 to £37,474 per annum

Contract Type: Fixed Term (24 months)

Basis: Full Time

Job description

Job Purpose:

This role involves the development and operation of a bench-scale rig for the continuous upgrading of pyrolysis bio-oil to produce liquid hydrocarbon fuels within the kerosene and diesel fuels range. In addition, the upgraded fuels will be tested using a dedicated engine to determine combustion and emission characteristics. This project is a major part of the IUK PyroPower Africa project, involving several academic and industrial partners and is funded by the InnovateUK. Applications are invited for a full-time Research Associate position in the Sustainable Fuels and Chemicals Research team within Energy and Bioproducts Research Institute (EBRI). EBRI is one of Aston University's flagship research institutes and is part of the College of Engineering and Physical Sciences. The applicant will join a research institute that boasts of a vibrant team of experienced and young researchers, exploring various aspects of bioenergy and sustainable chemicals research.

For this role, the researcher will carry out laboratory-based investigation on catalytic upgrading of bio-oils produced from the pyrolysis of agricultural residues in Nigeria by the lead project partner. Initial work will involve the assessment of literature to understand the current state of catalytic upgrading of bio-oil. Thereafter, the research will contribute to the final design of the rig and will lead the selection of catalysts and operation of the rig, including troubleshooting any initial challenges of operating the rig. The results from this work will be used to develop a process model for potential scale-up. The quality of the liquid biofuels should enable its direct combustion and blending with kerosene or diesel for electricity production for industrial and domestic application; the biokerosene component to meet Nigeria's household kerosene (HHK) standard. The role will involve detailed analytical characterisation of feedstock and reaction products, mass and energy balance calculations and process optimisation.

Training opportunities will be provided to acquire appropriate research skills, where necessary.

Main duties and responsibilities

- ▶ Develop research objectives and taking a project leadership role including literature reviews, laboratory work, field work and report - writing
- ▶ Contribute to the final design of the complete rig for continuous upgrading of pyrolysis bio-oil
- ▶ Conduct laboratory experiments with a selection of heterogeneous catalysts for continuous bio-oil upgrading
- ▶ Process modelling based on experimental results from bench-scale rig
- ▶ Working with industrial partners on upgrading process scale-up
- ▶ Maintain detailed and accurate records of research work
- ▶ Acquire and interpret data from a range of applicable analytical techniques
- ▶ Analyse and present data in both a clear and concise manner that is visually appealing
- ▶ Work closely with staff within EBRI as well as external project partners
- ▶ Present results at conferences and partner meetings, seminars and conferences

- ▶ Prepare project reports and where applicable, peer-reviewed manuscripts for dissemination
- ▶ Build and develop links with industry and the professions and to secure research funds from external sources
- ▶ Supervise and manage research projects within the team and assisting in all aspects of research development within the team, including developing proposals for research programmes consistent with EBRI's research strategy and priorities.

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	<p>A 2.1 degree in Chemical Engineering (or closely related subject).</p> <p>A PhD in Chemical Engineering (or a closely related subject).</p>	Application form
Experience	<p>Experience of initiating and conducting research up to doctoral level.</p> <p>Experience in chemical process design and process development</p> <p>Experience of laboratory-based research in advanced biofuels, bio-oil upgrading and heterogeneous catalysis</p> <p>Experience in process modelling and scale-up</p> <p>Experience in analytical techniques related to catalysts and pyrolysis bio-oils, reaction products of bio-oil upgrading and engine emissions</p> <p>Experience of writing up and presenting research for high quality publications.</p> <p>Experience of producing presentations, posters, reports for seminars, symposia and conferences</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>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>	Application form and interview

	Essential	Method of assessment
	<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> <p>Willing to travel abroad to Nigeria, Africa and other countries as part of project delivery</p>	

	Desirable	Method of assessment
Experience	<p>Experience of positive collaboration within and outside of candidate's immediate research team</p> <p>Experience of collaboration with relevant industrial partners on a project</p> <p>Supervising other personnel involved in the project</p>	Application form and interview

How to apply

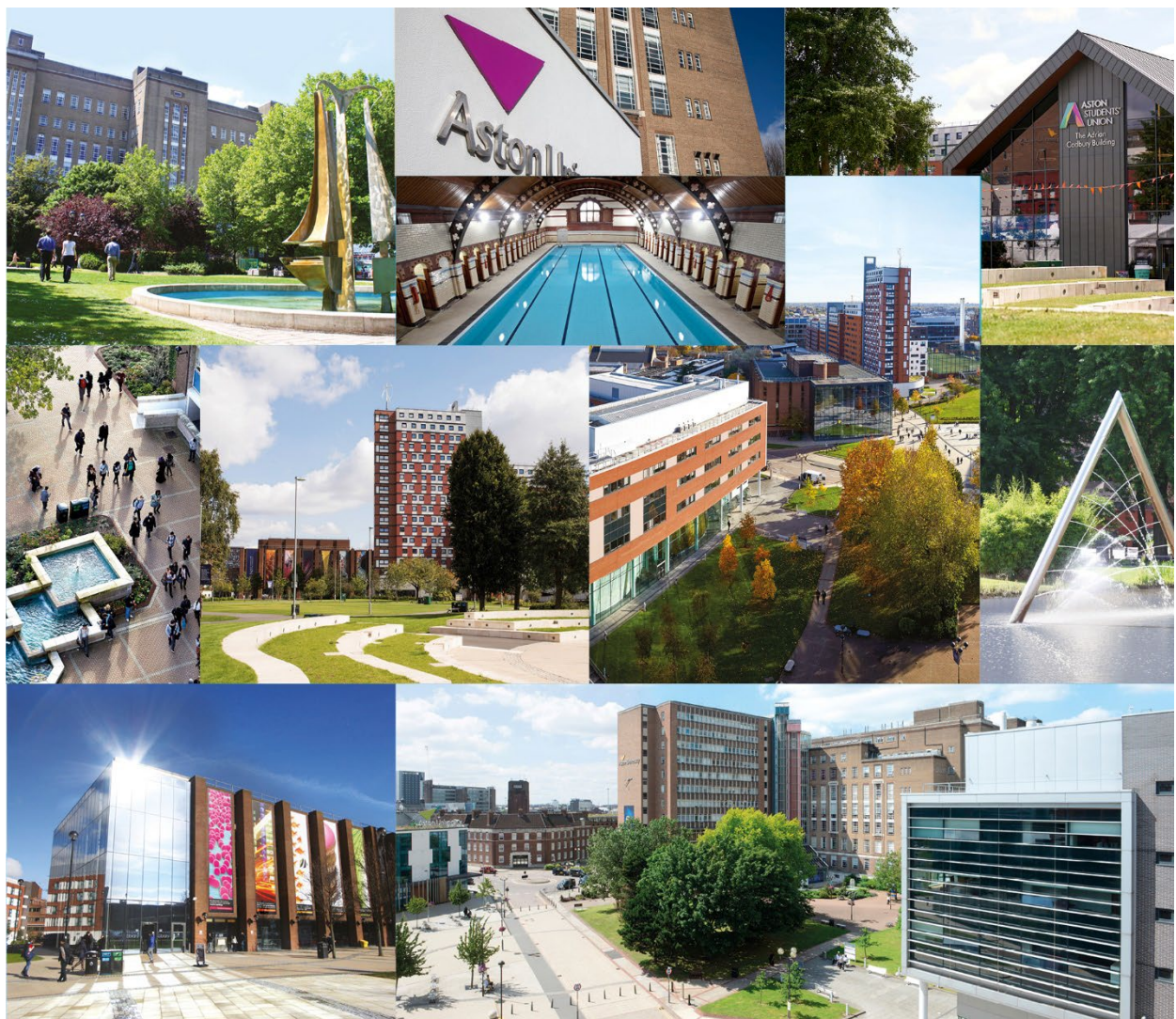
You can apply for this role online via our website <https://www2.aston.ac.uk/staff-public/hr/jobs>.

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: Jude Onwudili

Job Title: Senior Lecturer

Email: j.onwudili@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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gets real.**