

# Mechatronics Researcher – KTP associate



**OPPORTUNITY**

Where change  
gets real.



**Reference: 0574-24**

**Salary: £37,500 per annum, depending on experience, With up to a £5,500  
dedicated training and development budget**

**Contract Type: Fixed Term (33 Months)**

**Basis: Full Time**

## Job description

### Job Purpose:

This 33-month project takes the form of a [Knowledge Transfer Partnership](#) (KTP), which provides you with practical and formal training and the availability of support from experienced mentors from Colemans ([CNC Group Holdings Ltd](#)), [Aston University](#) and [Innovate UK Business Connect](#).

Colemans (CNC Group Holdings Ltd) faces an industry-wide challenge: dust suppression methods during demolition are water-based, therefore environmentally unfriendly and may not meet future regulations due to significant amounts of water deployed. Colemans and Aston University will be carrying out this KTP to enable the Company to meet the industry-wide challenge of excessive water consumption through current dust suppression methods.

To address this challenge a team will utilise mechanical, design and mechatronics expertise to develop a novel Smart Particulate Removal and Extraction System with Sensors (SPRESS). This offers a first-to-market opportunity for Colemans, with significant environmental benefits:

- ▶ Water usage will be drastically reduced, potentially eliminating water usage entirely and contamination of drainage systems with demolition dust waste.
- ▶ Automation through smart sensors for enhanced energy efficiencies.
- ▶ Material recovery from captured dust particles which can be re-purposed/recycled.
- ▶ Improved air quality by effectively removing particles from demolition sites and surrounding areas.

### This project includes 2 key phases:

1. Developing core smart sensor technologies (v1) for retrofitting current dust suppression systems in order to target water streams directly to dust generation sites, significantly reducing water usage.
2. Integrating the v1 technology with novel extraction technology for a commercial solution (v2), which will be manufactured together with a specialist manufacturer.

This KTP requires someone who is comfortable to innovate and think 'outside the box', able to work with multiple stakeholders as part of the team, as well as carry out work individually. They should enjoy 'hands-on'/ practical work as they will be developing and testing product prototypes.

**Candidate Profile:** PhD or equivalent R&D experience in either Mechatronics, Electronic Engineering, Mechanical Engineering, Mechanisation, or related subject.

### Skills/ experience required include:

- ▶ Understanding of integration of electronic and mechanised/motorised parts
- ▶ CAD skills
- ▶ MATLAB skills
- ▶ Programming skills
- ▶ Hardware and firmware knowledge of Arduino or similar embedded systems
- ▶ CFD skills would be desirable.
- ▶ Demonstratable experience with a systems-based approach to engineering, incorporating electronics and mechanical principles.

### Desirable

Considering the project envisages new mechatronics design development, the ability to program and use existing electronic sensors is highly desirable.

## **Main Duties/Responsibilities**

- ▶ Establishing Project Oversight and Knowledge Capture
- ▶ Technology, challenge, and user analysis
- ▶ Developing smart sensor functionalities to improve efficiency of current dust suppression technology.
- ▶ Developing novel waterless dust suppression technology
- ▶ Prototyping and testing

## **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
<b>Education and qualifications</b>	<ul style="list-style-type: none"> <li>▶ PhD or equivalent R&amp;D experience in either Mechatronics, Electronic Engineering, Mechanical Engineering, Mechanisation, or related subject.</li> </ul>	Application form
<b>Experience</b>	<ul style="list-style-type: none"> <li>▶ Demonstratable experience with a systems-based approach to engineering, incorporating electronics and mechanical principles</li> </ul>	Application form and interview
<b>Aptitude and skills</b>	<ul style="list-style-type: none"> <li>▶ Understanding of integration of electronic and mechanised/motorised parts</li> <li>▶ CAD skills</li> <li>▶ MATLAB skills</li> <li>▶ Hardware and firmware knowledge of Arduino or similar embedded systems</li> <li>▶ Programming skills</li> </ul>	Application form and interview

	Desirable	Method of assessment
<b>Aptitude and Skills</b>	<ul style="list-style-type: none"> <li>▶ CFD skills</li> </ul>	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

				
<b>Innovation</b>	<b>Collaboration</b>	<b>Ambition</b>	<b>Inclusion</b>	<b>Integrity</b>
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](mailto:recruitment@aston.ac.uk).

## Contact information.

### Enquiries about the vacancy:

Name: Dr Yu Jia, Engineering and Technology, College of Engineering & Physical Sciences

Email: [y.jia1@aston.ac.uk](mailto:y.jia1@aston.ac.uk)

### Enquiries about the application process, shortlisting or interviews:

Recruitment Team via [recruitment@aston.ac.uk](mailto: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:** You should ensure that you meet the eligibility requirements, including meeting the [English language standards](#). If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful. Please see UKVI guidance for further information on eligibility, knowledge of English requirements and approved test centres <https://www.gov.uk/tier-2-general>

With the end of free movement for EU/EEA/Swiss nationals from 1 January 2021, the UK's new immigration system applies to all non-UK/Irish nationals who require a visa.

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**.

You can find further information about each of these visa routes on our candidate immigration 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 below for further details.

**Academic Technology Approval Scheme (ATAS):**

If you will conduct research in your role and you apply for a Skilled Worker or Temporary Worker GAE visa, you may need to apply for and obtain ATAS clearance before Aston can issue a Certificate of Sponsorship for your visa application.

This process can take at least 6 weeks to process, and Aston will consider this when confirming your expected start date. Processing times will increase between April and September and can longer to complete.

There is no fast-track option available. ATAS certificates will be processed in order of receipt.

You can find more information about ATAS on our candidate immigration page.

## **Before you start and Right to Work**

### 90-day entry vignette

If you have applied for your visa outside of the UK, you will receive a vignette in your passport which is usually valid for 90 days. Please make sure to travel to the UK within the 'valid from' and 'valid to' dates on this visa. If you entered the UK before or after these dates, you would not 'activate' the visa and you would need to leave and re-enter the country.

You will also receive a decision letter confirming details about your immigration permission and where to collect your Biometric Residence Permit.

### Cost of Living - Estate and Letting Agents

There are numerous Estate and Letting Agents in and around Birmingham that can help you find suitable accommodation. The Midland Landlord Accreditation Scheme provides a list of professional agencies and landlords who have applied with them for accreditation. Whilst accreditation is not a guarantee of quality, it provides some reassurance about the standard of the service they provide.

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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