



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in Autonomous Manufacturing of Robotics Systems,
Faculty of Engineering and Physical Sciences**



Salary: Grade 7 (£39,105 – £46,485 p.a.)

Reference: EPSME1178

Location: Leeds campus

Closing date: Sunday 17 November 2024

Fixed-term for up to 2 years

We are open to discussing flexible working arrangements

Research Fellow in Autonomous Manufacturing of Robotics Systems, School of Mechanical Engineering.

Are you enthusiastic and experienced in designing and building advanced manufacturing platforms such as 3D printers? Are you looking for a new and exciting challenge as part of a world class advanced manufacturing and robotics team? Do you want to design and create autonomous manufacturing platforms that will change our lives?

This is your opportunity to make a tangible impact within the field of manufacturing and robotics while collaborating with a team of brilliant minds in a dynamic research environment. In this role you will lead the development of a fully integrated manufacturing capability for the end-to-end autonomous fabrication of robotics and autonomous system by developing and integrating advances in hybrid manufacturing, machine control, inspection and automation.

You will work across two world-leading research groups, the advanced manufacturing laboratory and the [Real Robotics](#) laboratory, at the [University of Leeds](#). Between these two research groups they have research projects totalling more than £30m. The Advanced Manufacturing laboratory comprises a team that specialise in constructing digital manufacturing systems and developing new fabrication processes housed within a dedicated 140m² state-of-the-art research facility. The Real Robotics research includes robotic manufacturing and manufacturing of robots including world class robot [fabrication facilities](#), and robotic systems to inspect and repair city infrastructure. Current major externally funded projects include [Pipebots](#), [Trustworthy Autonomous System Verifiability Node](#), and the Advanced Machinery and Productivity Institute ([the AMP Institute](#)).

In this role you will take a leadership role in the design and implementation of Robots, for manufacturing advanced functional systems. As well as supporting project partners with hardware design, you will conduct pioneering work on innovative systems integration for robotics, and autonomous control strategies. Holding both a PhD (or have submitted your thesis before taking up the role), and a Bachelors or Masters degree in Electronic and Electrical Engineering, Mechatronics, Mechanical Engineering, Robotics or a related discipline, you will have experience in the design construction and testing of advanced hardware platforms for robotics ideally including aerial platforms.



What does the role entail?

As a Research Fellow, your main duties will include:

- Creating a bespoke robotic manufacturing system for processing complex 3D mechatronic systems;
- Developing machine control within the system to generate unique 3D parts;
- Benchmarking various process modules and materials and proposing suitable fabrication strategies;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals whilst directing the research in collaboration with the collaborative project partners and industrial end-users, including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own research;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working both independently and also as part of a larger team of researchers;
- Working with the project collaborators to realise sophisticated practical demonstrators and showcasing the advanced manufacturing platform;
- Contributing to joint discussions with the wider research group, including collaborators in Manchester, Huddersfield and Salford, making contacts for future collaboration where appropriate;
- Working within and applying the standard operating procedures, health and safety regulations and quality assurance procedures of the School, Faculty and University;
- Making good day-to-day progress towards project deliverables, ensuring that project objectives are met and that technical reports are completed on time to the satisfaction of the principal investigator, project leader and sponsor;
- Maintaining good records and laboratory notebooks and back up research data according to University and sponsor requirements;
- Producing full system and process documentation;
- Maintaining your own continuing professional development and aiding other colleagues as appropriate;



- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or have submitted your thesis before taking up the role) and a Bachelors or Masters in Electronic and Electrical Engineering, Mechatronics, Mechanical Engineering, Robotics or a related discipline;
- Experience in the design, construction and testing of hardware platforms for robotics and/or automated machines;
- Experience in designing and creating mechanical movement, sensing and integrating electronics within a single hardware platform;
- The ability to use basic embedded systems software and hardware platforms;
- A good understanding of developing and building manufacturing apparatus, machine control, 3D CAD and material processing;
- An enthusiastic approach to research in robotics and autonomous systems;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- A high level of interpersonal and communication skills, including written, verbal and presentational, with the ability to work as a member of a team;
- Demonstrated ability to work independently, showing initiative and creativity;
- A strong commitment to your own continuous professional development.

You may also have:

- The ability to use advanced embedded systems software and hardware platforms such as microcontrollers and FPGAs;
- The ability to contribute to and develop interdisciplinary collaborative research projects in a broad range of robotics application areas, for example as evidenced by prior experience of working on interdisciplinary projects;



- Experience in programming robotic systems;
- Experience in Additive Manufacturing processes.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23:59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Professor Robert Kay](#), School of Mechanical Engineering, University of Leeds

Tel: +44 (0)113 343 2139

Email: R.W.Kay@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering and Physical Sciences](#) and the [School of Mechanical Engineering](#).

Working at Leeds

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to



Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena SWAN [Silver](#) Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by emailing HR via hr@leeds.ac.uk.

Criminal Record Information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

Salary Requirements of the Skilled Worker Visa Route

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information, please visit [the Government's Skilled Worker visa page](#).

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit [the Government's page, Apply for the Global Talent visa](#).

