

Research Fellow (Rail Vehicle Dynamics and Testing)

School of Science, Computing and Engineering

Applicant Recruitment Pack

Dear Applicant



Huddersfield is an amazing institution, taking its students on life changing journeys and providing a working environment where our colleagues can achieve career success and personal accomplishment. Originally from Huddersfield and having graduated in Engineering here, I am proud to lead this institution.

Here at the University of Huddersfield we have a lot to be proud of including collaborative research with some of the top universities in the world. We are the first University to receive the Global Teaching Excellence Award and achieved the TEF Gold Award. We have transformed our academic workforce and are now ranked in the top 5 for the percentage of academic staff with a higher degree and have set the expectation that all academic staff have doctorates and publish at least at an international level. We take leadership seriously and now are the first organisation in the world where all members of the Senior Leadership Team are Chartered Managers. This commitment to transformational leadership is underpinning our drive towards becoming a global University with the aim of creating partnerships with 140 of the top 300 world-leading Universities.

We have won numerous awards including University of the Year, Entrepreneurial University of the Year, Best University workplace, the Queen's Award for Enterprise and three national honours in the form of Queen's Anniversary Prizes.

We are a highly sustainable organisation and placed amongst the top 10 in the UK for financial sustainability, with no historic debt. As such we have been able to invest more than £150m over the last ten years in a top-class estate and facilities.

The University is a great place to work and our staff report they are proud to work here. We expect high performance from our colleagues and in return you can expect to work in a collaborative and engaging environment with an outstanding development support to all staff.

Yours sincerely

Professor Bob Cryan CBE DL

Vice-Chancellor



University of Huddersfield – Key facts

Here are some key facts that make the University of Huddersfield a great place to be.

Great learning

- We're in the top 10 in England for the number of students going on placement (HESA Student Record 2023/2024).
- 100% of our undergraduate students have the opportunity to undertake professional work-related experience during their studies. This includes placements, industry standard projects and real-world case studies.*

Great teaching

- The University of Huddersfield has been rated Gold in the Teaching Excellence Framework (TEF) 2023. This means that the student experience and student outcomes are typically outstanding. These ratings were awarded in 2023, for four years.

  These ratings reflect the University's unwavering commitment to providing an exceptional student experience and fostering excellent student outcomes.
- In 2017, the University won the first Global Teaching Excellence Award recognising the University's commitment to world-class teaching and its success in developing students as independent learners and critical thinkers (Higher Education Academy).
- Our staff rank first in England for the proportion with higher degrees and teaching qualifications, as well as being top five for those holding doctorates (HESA 2025).
- 24 of our colleagues have received National Teaching Fellowship awards since 2008, a figure matched by only one other University.
- Huddersfield is the only University where 100% of the permanent teaching staff are Fellows of the Higher Education Academy** (November 2020).

* This applies to undergraduate courses of more than 12 months duration.

** Permanent staff, after probation: some recently appointed colleagues will only obtain recognition in the months after their arrival in Huddersfield, once they have started teaching; research.

Great future

- 94% of our undergraduate students go on to work and/or further study within fifteen months of graduating (HESA Graduate Outcomes 2022/23, UK domiciled, other activities excluded).

- 98% of our postgraduate students go on to work and/or further study within fifteen months of graduating (HESA Graduate Outcomes 2022/23, UK domiciled, other activities excluded).

Research and innovation

- We've world-leading applied research groups in biomedical sciences, engineering and physical sciences, social sciences and arts and humanities.

- We're a dynamic institution that has quadrupled our research income and its postgraduate research in seven years.

Customer service

- Our Library was the first to gain the UK National Customer Service Excellence Award and is the holder of eight marks of distinction.



Award-winning

- Queen's Anniversary Prize (2021)
- Queen's Anniversary Prize (2019)
- A gold-rated University (TEF 2023)
- Global Teaching Excellence Award (HEA 2017)
- Queen's Anniversary Prize (2015)
- New University of the Year (Educate North 2015)
- Athena Swan Silver Award (2026)
- We are a five star University (QS awards 2020,2023)
- University of the Year (Times Higher Education 2013)
- Entrepreneurial University of the Year (Times Higher Education 2012)
- Queen's Award for Enterprise (International Trade 2013)
- Guardian Education Awards (Inspiring Leader 2013)

The Role – Research Fellow

Job Description

Job Title: Research Fellow (Rail Vehicle Dynamics and Testing)

Grade: 7

Job Purpose:

The post of Research Fellow reports to the Associate Director of the Institute of Railway Research and its main objectives are:

a) To undertake research in accordance with the Research Project objectives as a member of a small team delivering a focussed programme of research and consultancy in the area of railway engineering and systems modelling. The role will mainly focus on rail vehicle dynamics / wheel-rail interface engineering, experimental testing and engineering data analytics.

b) Maintain an active research programme through the sustained output of high-quality peer-reviewed research publications or other recognised forms of output, demonstrating high impact.

c) Contribute to the School's reputation and research culture.

Main Duties and Responsibilities:

1. Undertake the interpretation, evaluation and criticism of existing literature.
2. Develop models of railway engineering systems, undertake simulation studies and analyse results using appropriate software (e.g. mainly specialist multi-body dynamics simulation software such as Vampire, Simpack or VI Rail and/or general mathematical modelling using Matlab/Simulink).
3. Plan, execute and manage supporting laboratory and field tests using specialist measuring equipment (sensors/data loggers), and supporting software (e.g. MiniProf, NI LabView, C++, Python, Matlab).
4. Critically evaluate and interpret data using appropriate statistical methods (and potentially machine learning tools), using software tools such as Matlab, Python, PowerBI.
5. Process, format and structure data from a variety of sources and pre-process in a suitable format, considering the research question being evaluated, before carrying out simulations and / or statistical analysis.
6. Analyse results and prepare clear, concise, high-quality project technical reports to deliver the agreed aims and objectives of the project.
7. Plan, execute and manage a range of research methods appropriate to the research area.
8. Assist in the preparation of material for peer reviewed publication.
9. Assist in the preparation and delivery of conference presentations.
10. Carry out administrative tasks associated with the project or funding, for example, risk assessment, including health and safety, organisation of project meetings and preparation of documentation.
11. Carry out undergraduate and postgraduate supervision within the postholder's area of expertise.

12. Assist in the completion of research grant reports and funding applications.
13. Assist in undergraduate and graduate teaching, up to a maximum of six hours per week.
14. Contribute pro-actively to the generation of plans and strategies to conduct efficient research.
15. Provide day to day supervision and guidance to research assistants and students, where required.
16. Participate in team meetings and committees, as appropriate.
17. Ensure the implementation of the University's policies and regulations within the remit of the postholder's duties.
18. Undertake other duties directed by the Research Leader.

Person Specification - Research Fellow

The successful candidate will be able to demonstrate the following attributes:

Qualifications

- Qualified to degree level in mechanical engineering or a related engineering discipline (e.g. automotive, aerospace etc.).
- Doctoral qualification in a relevant area e.g. dynamics, railway (or other transport systems) engineering, vehicle-track interaction, mechanical engineering systems simulation, control of mechanical systems.

Experience

- Post-graduate academic or industrial experience in a relevant area.
- A track record of delivering key aspects of research projects in relevant areas.
- Experience developing simulation models of mechanical engineering/dynamic systems using commercial modelling software or from first principles, preferably gained in a railway, transport or related environment.
- Experience analysing, interpreting and presenting complex simulation results and test data, including the preparation of high-quality technical reports.

Knowledge and Abilities

- Demonstrable knowledge in at least one of the following areas:
  - Multi-body dynamic simulation
  - Mathematical modelling and simulation of mechanical engineering systems
  - General railway engineering system simulation using Matlab/Simulink
  - Engineering data analysis
  - Applied statistical and mathematical modelling techniques
  - Control system modelling
  - Test and data logging equipment and experimental methods relevant to dynamics and associated areas.
- Adaptability to apply knowledge and experience to a variety of engineering problems.
- Excellent written and verbal communication skills, with the ability to present and explain complex data, results and technical concepts to a range of audiences.
- Ability to work independently to solve problems and manage own research effectively.
- Ability to work effectively as part of a team and to liaise successfully with industry and academic partners.
- Organisational and administrative skills to manage own research and support the effective management of research activities undertaken by others.

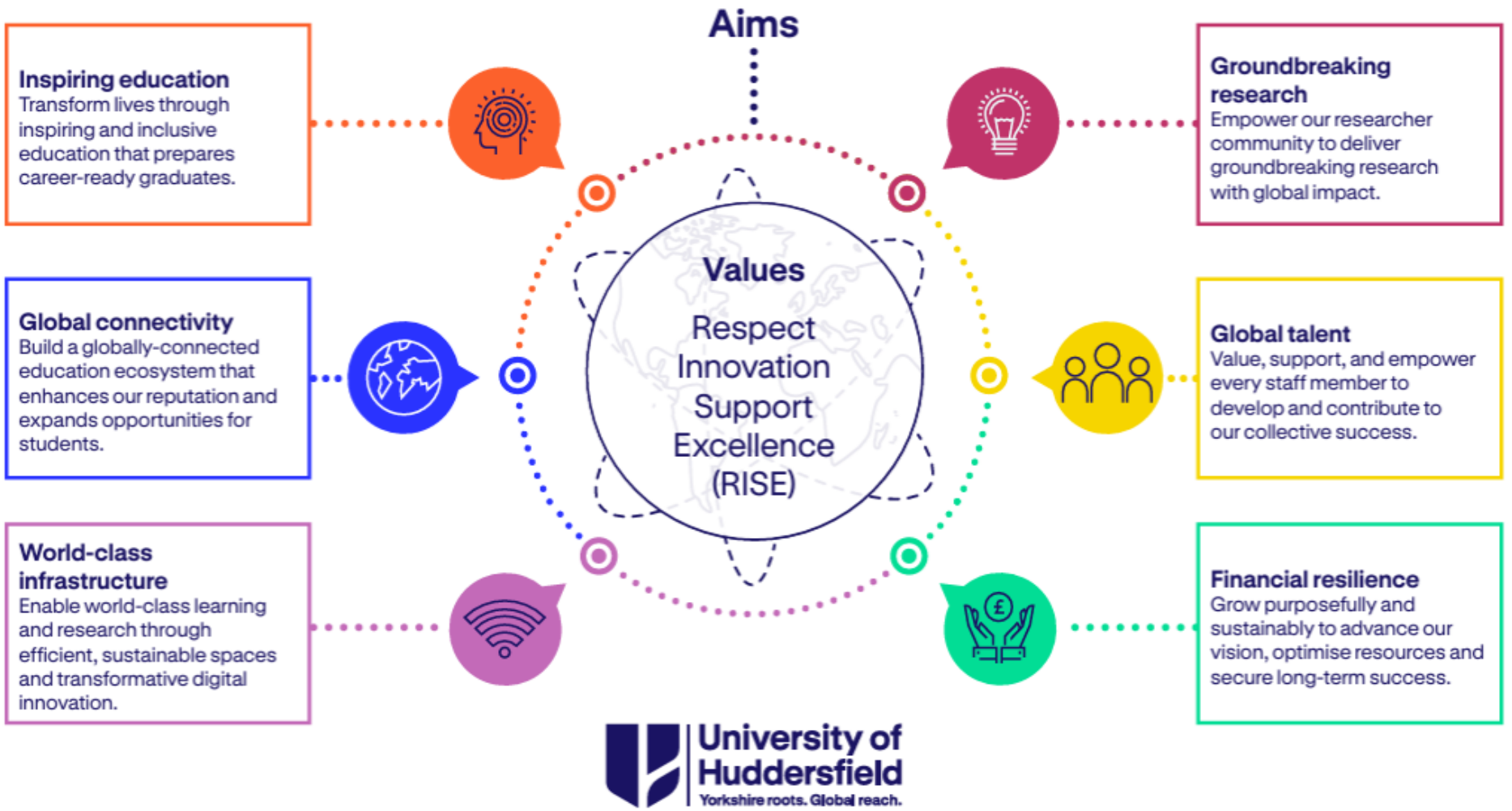
Personal Qualities

- Commitment to Equality, Diversity and Inclusion.
- Commitment to excellent customer service.
- Demonstrable personal and professional commitment to the University's strategy, vision and values.

Please make sure you tell us how you meet all elements of our person specification and provide us with examples of this in your supporting statement on our application form.

2030 Strategy

Vision: A globally-recognised University that transforms lives through inspiring education, groundbreaking research, and international engagement.





Equality, Diversity, Inclusion and Staff Networks

The University embraces and celebrates the diversity of our staff, students and applicants and works to ensure University policies, practices, procedures and projects are inclusive. Central to our strategy is inspiring and enabling all our students to succeed and we have committed to eliminating attainment gaps in degree outcomes, student continuation and graduate employment outcomes.

The University of Huddersfield is proud to have been accredited as a Disability Confident Leader, building on our previous accreditation as a Level 2 Disability Confident Employer.

The University has a number of staff networks which provide an opportunity for staff who share a protected characteristic to network, obtain peer support and share information. Our networks include the following:

- LGBTQI+ Staff Network
- Race Equity Staff Network and Affinity Groups
- Staff Disability Network and Neurodiversity Group
- Women's Staff Network
- Inclusive Allies Staff Network

Further information on the staff networks detailed above can be found on our Equality, Diversity and Inclusion web pages



Terms and Conditions

- This post is offered on an indefinite basis and is full time (37 hours per week).
- The salary for this post will be at Grade 7 (£41,071 - £46,050 per annum) and is subject to cost of living and incremental progression until the top of the grade is reached. It is expected that salary will be offered at the bottom of this grade.
- Annual leave entitlement is 37 days plus statutory and discretionary holidays throughout the year.
- Enrolment into the local government's career average revalued earning pension scheme or Universities Superannuation Scheme (subject to conditions) is automatic.
- Should you have any queries about working at the University, or any of the terms and conditions of employment stated above, please contact HR@hud.ac.uk



Working at the University of Huddersfield

When you join our team, you'll have access to a wide variety of staff benefits, ranging from wellbeing initiatives and staff networks, to support for your personal development.

Wellbeing

The University is accredited by the Workplace Wellbeing Charter, the national accreditation standard that recognises an organisation's commitment to improving the lives of those who work here. This accreditation demonstrates our commitment to creating a culture that values health and wellbeing.

Personal and Professional Development

You will have access to a wide range of development opportunities to support you. Please take a look at our People and Organisational Development web pages where you can find more details.

Employee Benefits and Discounts

You can take advantage of a wide variety of employee benefits, ranging from salary sacrifice schemes to retail discounts from local companies.

Campus Facilities

Although we enjoy a town centre location, our campus has a canal side location and many green spaces to enjoy. We have a range of delicious food outlets on campus, and access to gym, swim and fitness classes through our ActiveHud membership and benefits. If you drive to work, on appointment you can apply to join the waiting list for our chargeable University car parks.

We're based in the town centre which means we have easy access to local supermarket and shopping facilities.



How to Apply

Here you can find out more about our School of Computing and Engineering.

Here you can find out more about the Institute of Railway Research.

If you would like to discuss this opportunity further or have any questions about the role, please email irr.info@hud.ac.uk

Closing date for applications is 06 December 2026.

Reference: R8248

Interviews are expected to take place on 06 January 2027.