



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

**Research Fellow in Rail and Energy Cross-Sector Digital Innovation (2 posts),  
Faculty of Engineering and Physical Sciences**



**Salary: Grade 7 (£41,064 – £48,822 p.a.)**

**Reporting to: Professor Kang Li**

**Reference: EPSEE1155**

**Closing date: Tuesday 16 June 2026**

**Fixed term (Up to six months - to complete specific time limited work)**

**Location: Leeds main campus**

**We are open to discussing flexible working arrangements.**

# Research Fellow in Rail and Energy Cross-Sector Digital Innovation (2 posts), School of Electronic and Electrical Engineering.

Are you a researcher looking for your first challenge? Do you have a background in electric power systems, transport decarbonization, data science, or a closely related field? Do you want to further your career in one of the UK's leading research-intensive universities?

## Overview of the Role

As a Research Fellow in Rail and Energy Cross-Sector Digital Innovation, you will join an exciting consortium to accelerate the journey to transport and energy cross-sector decarbonisation by exploring the cross-sector data sharing infrastructure and digital twinning. The project will explore the development of a cross-sectoral (grid-rail) microgrid digital twinning architecture featured with data interoperability, cyber-resilience, and regulatory alignment. The case study will involve the design of digital twinning for railway energy hubs, a novel microgrid technology to deliver creative, predictable, and cost-effective use of electric power on the transport while offering flexibility services to the power grid.

## Main duties and responsibilities

- Evaluating the feasibility of data sharing between energy and rail sectors through a decision support framework;
- Exploring standardised data representation and examining principles for resilient and secure digital twinning in a cross-sector context;
- Assessing the requirements for a data governance and cybersecurity framework suitable for grid-rail coupling;
- Developing a case study of implementing the data-sharing framework to railway energy hubs;
- Conducting railway traction power network modelling and control studies, and assessing energy hub potentials in improving energy efficiency and offering ancillary services to the utility grid;
- Generating and pursuing independent and original research ideas in the appropriate subject area;



- Developing research objectives and proposals and contributing to setting the direction of the research project and team 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 independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Maintaining your own continuing professional development and acting as a mentor to less experienced 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.

## Qualifications and skills

### Essential:

- A PhD (or have submitted your thesis before taking up the role) in Electrical Engineering, Data Science, or a closely related field;
- A strong background in modelling and control of smart energy systems and energy storage systems;
- Proven experience in data analysis, machine learning, and design and development of digital twins;
- 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;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both individually and in a team;



- A strong commitment to your own continuous professional development.

### **Desirable:**

- Experience of pursuing external funding to support research;
- Experience with cloud platforms for data processing and deployment, including managed database services;
- Experience of working in collaborative projects on transport electrification/decarbonization or with industrial partners in the energy and transport field with a sound understanding of the intersection of railway and energy systems.

## **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 Kang Li](#), Chair in Smart Energy Systems**

Tel: +44 (0)113 343 2045

Email: [K.Li1@leeds.ac.uk](mailto:K.Li1@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 the School of [Electronic and Electrical 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](mailto: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](#).

