

**THE UNIVERSITY OF MANCHESTER**  
**PARTICULARS OF APPOINTMENT**  
**FACULTY OF SCIENCE & ENGINEERING**  
**SCHOOL OF ENGINEERING**  
**DEPARTMENT OF MECHANICAL, AEROSPACE & CIVIL ENGINEERING**  
**RESEARCH ASSOCIATE IN INTERNATIONAL TRANSPORT AND CLIMATE CHANGE**  
**VACANCY REF: S&E-016471**

Salary: £32,816 to £40,322 per annum (depending on experience)

Hours: Full time

Duration: starting as soon as possible until 31 January 2023

Location: Oxford Road, Manchester

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**Enquiries about the vacancy, shortlisting and interviews:**

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**Overall Purpose of the Role**

Applications are invited for the above position with an immediate start to:

- Lead research activity within a UKERC project on aviation and shipping, ensuring coherence with the work of related academics at the Universities of Leeds and Oxford.
- Research alternative fuel supply chains to understand a wider fuel system context.
- Conduct qualitative interviews with stakeholders to understand the barriers, opportunities and interdependencies surrounding sustainable fuels.
- Connect with colleagues within the Decarbonising the UK Freight Network to establish common interests around which proposals can be developed.

Mitigating climate change across all sectors is essential. Two sectors that present particular challenges to successful CO<sub>2</sub> mitigation are international aviation and shipping. While the

shipping sector has many options for low-carbon propulsion, incentivising change is hugely problematic. For aviation, technological options are much more limited, leading attention to focus on demand reduction, offsetting, as well as the potential for sustainable aviation fuels. Set in a context where all sectors seek alternatives to fossil fuels, understanding the realistic proposition for sustainable aviation and shipping fuels in the timeframes dictated by the Paris Agreement is essential, and that is the overarching issue that this research associate role will focus upon.

We are seeking an enthusiastic, interdisciplinary researcher to join the Tyndall Centre's vibrant team in Manchester to undertake a research associate role with two distinct elements:

- 1) To research the barriers and opportunities surrounding sustainable fuels for aviation in a [pre-defined project](#) funded by the UK Energy Research Centre (UKERC).
- 2) Through the [EPSRC's Decarbonising the UK's Freight Transport Network](#), the applicant will build links to assist with the development of new proposals aligned with the Network.

The role would suit an interdisciplinary individual with a background in climate change mitigation, experienced in stakeholder engagement and qualitative research methods, but with a solid grasp of the quantitative aspects of energy systems and/or carbon budgeting. Ideally familiar with international aviation and/or shipping and alternative fuels such as biofuel, the candidate must have a strong publication record for career stage and demonstrable skills in contributing to successful research proposals. Being a good team worker is essential.

The successful applicant will be part of the School of Engineering based in the Department of Mechanical, Aerospace and Civil Engineering and the Tyndall Centre for Climate Change Research.

### **About us**

The University of Manchester is the largest campus university in the United Kingdom within easy walking distance of the cosmopolitan city centre and a short train journey from the spectacular Peak District National Park. At the University of Manchester, we are at the forefront of pioneering discoveries, interdisciplinary collaboration and cross-sector partnerships that are tackling the biggest questions facing the planet.

The School of Engineering is one of two large, multi-disciplinary Schools within the Faculty of Science and Engineering, the other being the School of Natural Sciences. The Schools operate alongside the Faculty's research institutes including: Manchester Institute for Biotechnology, Dalton Nuclear Institute and the Thomas Ashton Institute. The School is made up of four departments; Chemical Engineering & Analytical Sciences, Computer Science, Electrical & Electronic Engineering and Mechanical, Aerospace & Civil Engineering.

The School's purpose is to foster an environment and culture where people use curiosity and imagination to create engineering solutions and develop skills that have a positive impact on society and we believe we can't do this without our people.

The School hosts over six thousand undergraduate and postgraduate students across seven academic teaching disciplines. Our interdisciplinary, research spans multiple themes including, robotics, nuclear, bioengineering, modelling, virtual engineering and resilient systems and is enabled by world-class facilities and technical support. Social responsibility is at the centre of everything we do whether that is our teaching and learning incorporating the UNs sustainable development goals, our research addressing societal grand challenges such as plastic usage,

climate change or the ageing population, and our commitment to supporting our students, staff and communities.

The School has initiatives to enhance the working environment of all staff including engagement lunches, flexible working, support groups, away days, wellbeing activities, training and development opportunities, mentoring, flexible working, social spaces, and volunteering opportunities.

We welcome applications from all sections of the community and are committed to having a representative workforce. Across the School we hold Bronze and Silver Athena SWAN Awards, which recognises our commitment to equality, diversity and inclusion and particularly the advancement of women's careers in STEM. <https://www.mace.manchester.ac.uk/about/women/>

The University also holds a Bronze Race Charter Mark recognising our commitment to improving the representation, progression and success of minority ethnic staff and students within higher education. In addition, we are a Disability Confident Employer, guaranteeing an interview for any disabled applicant who meets the minimum requirements for a job.

The Department of MACE is the largest Department within the Faculty of Science and Engineering. Manchester was the birthplace of the engineering discipline, and MACE has its roots in the Institute of Mechanics founded in 1824. Today the Department hosts over 1300 undergraduate and 600 postgraduate students, delivers undergraduate programmes across Mechanical, Aerospace and Civil Engineering, and MSc programmes across four Disciplines of Education. With 130 academic staff, 100 technical and administrative staff, and 300 postgraduate researchers, the Department is **at the forefront of engineering education** in the UK. More information about the Department can be found at: <https://www.mace.manchester.ac.uk/>

### Key Responsibilities, Accountabilities or Duties:

- Use qualitative and quantitative methods to undertake and deliver high quality research.
- Lead research activity within a UKERC project on aviation and shipping, ensuring coherence with the work of related academics at the Universities of Leeds and Oxford.
- Research alternative fuel supply chains to understand a wider fuel system context.
- Connect with colleagues within the Decarbonising the UK Freight Network to establish common interests around which proposals can be developed.
- Conduct qualitative interviews with stakeholders to understand the barriers, opportunities and interdependencies surrounding sustainable fuel supply chains for aviation.
- Engage in UKERC and Tyndall networking opportunities and events.
- Communicate complex information, orally, in writing and electronically to a wide range of audiences, including those outside of academia.
- Disseminate research by publishing in high-quality journals, presenting at leading international conferences, and seeking to transfer results outside academia.

- Help to attract research grant funding from research councils, industrial stakeholders and third sector organisations.
- Develop and maintain national and international research collaborations.
- Proactively engage with industry, third sector, public policy and end-users to promote and disseminate research, embedding social responsibility in the process.
- Contribute towards the administration and team activities of the Tyndall Centre.

### **PERSON SPECIFICATION**

#### **Essential Knowledge, Skills and Experience:**

- A PhD or equivalent (including industrial) experience in climate change mitigation or a similar related field.
- Some relevant postdoctoral (or industrial equivalent) research experience with familiarity with one or more of: political economy of sustainable fuels; sustainable fuel supply chains; science and technology studies relevant to climate change mitigation; innovation theories.
- Experience in qualitative research methods.
- An emerging record of research built on high quality, peer reviewed research outputs.
- An emerging reputation including invites to deliver talks at national or international events/ conferences.
- Evidence of some success with applying for and gaining competitive external funding.
- Experience of engaging externally with industry, third sector, public policy and end-users to develop research impact through the delivery of public lectures, policy engagement and the production of open access materials.

Knowledge and commitment to the University and its values including social responsibility.