

THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF ENGINEERING

DEPARTMENT OF MECHANICAL, AEROSPACE & CIVIL ENGINEERING

LECTURER/SENIOR LECTURER IN FLUID MECHANICS/HYDRAULICS

VACANCY REF: SAE-021943

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| Salary: | Grade 7 £44,414 to £54,421 OR Grade 8 £56,048 to 66,890 per annum, depending on relevant experience |
| Hours: | Full Time |
| Duration: | Permanent |
| Location: | Oxford Road, Manchester |

Enquiries about the vacancy, shortlisting and interviews:

Name: Professor Hector Iacovides

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Name: Professor Ben Rogers

Email: benedict.rogers@manchester.ac.uk

Background

The University of Manchester has a wide range of expertise in all aspects of fluid mechanics, including theoretical, computational and experimental work spanning a broad range of Engineering applications as well as expertise in Mathematics, Physics, Environmental Sciences. It is envisaged that appointees will be based in the Fluids & Environment Department in The School of Engineering, which is comprised of around 60 academic and research staff and over 100 PhD students. Our research has a strong focus on flows in the natural and built environment, and the interface between them, especially in low carbon and offshore renewable energy generation, in flows in and around buildings, and in coastal erosion and defences. In addition to expertise in fluid mechanics, we also carry out world-leading research in thermodynamics, heat transfer, biological flows and aerospace sciences. The teaching opportunities for the appointee will include contribution to the development, delivery and coordination of content in the Hydraulics and/or Thermo-Fluids strands which form a key part of our undergraduate programs in Civil Engineering, Mechanical Engineering, Aerospace Engineering, and our specialist master's

programs including Thermal Power and Fluids Engineering, Aerospace Engineering and Renewable Energy and Clean Technology.

The University welcomes applications for permanent posts across the Grade 7 and Grade 8 Lecturer/Senior Lecturer scale, dependent on qualifications and experience, within the School of Engineering in areas relating to Fluid Mechanics and Hydraulics.

We seek to appoint candidates with potential to become world leaders in the domain of Fluid Mechanics and Hydraulics, with a passion to make substantial contribution to exciting delivery and syllabus development at undergraduate and postgraduate level. We expect successful candidates to bring experience across a range of domains and are particularly keen to hear from those with experimental expertise. We are interested to hear from early and mid-career academics with interests in any of the following areas:

- Low carbon energy applications including renewable energy generation, nuclear thermal hydraulics and energy storage.
- Impact of climate change on sustainable infrastructure and resilience of the natural and built environment, including sea level rise, changing effects of wind, waves, rainfall, flooding, etc.
- Air flows in and around buildings, forces, ventilation, heating and cooling, especially in relation to climate change and sustainability.
- Exploration of complex flow physics relevant to engineering; including heat transfer, flow-structure interaction, particle/debris and non-Newtonian flows.

The research of the successful candidate may be at the fundamental stage or more translationally focused towards applications, with an expectation to deliver world-leading research and clear pathways to impact.

As an equal opportunities employer we welcome applicants from all sections of the community regardless of age, sex, gender (or gender identity), ethnicity, disability, sexual orientation and transgender status. All appointments are made on merit. Please note that we are unable to respond to enquiries, accept CVs or applications from Recruitment Agencies.

The University actively fosters a culture of inclusion and diversity and seeks to achieve true equality of opportunity for all members of its community. The Faculty welcomes applications from all sections of the community and are committed to having a representative workforce. Across the Schools we hold Bronze and Silver Athena SWAN Awards, which recognise our commitment to equality, diversity and inclusion and particularly the advancement of women's careers in STEM.

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.

Our University is positive about flexible working – you can find out more here. Blended working arrangements (full and part-time) may be considered.

Key Responsibilities, Accountabilities or Duties:

Overall Purpose of Role

The role holder will develop research and teaching in research areas relating to fluid mechanics and/or hydraulics. This will entail collaboration with colleagues within the School and across the wider University, as well as more widely with industrial and international collaborators and stakeholders, to develop a portfolio of cutting edge disciplinary or interdisciplinary research activity. The appointee will lead on the delivery and development of teaching on fundamental topics and topics related to fluid mechanics and/or hydraulics for either disciplinary or interdisciplinary programmes in the School with opportunities to also contribute to cross-University programmes.

Main Responsibilities (Grade 7 Lecturer)

- Securing funding from research councils and other relevant sources such as industry and non-government bodies to support research activity and researchers.
- Development and delivery of internationally excellent research in the area of fluid mechanics and/or hydraulics.
- Supervision of postgraduate research students and researchers.
- Publication of research in leading journals and presentation at international conferences and in other fora relevant to stakeholders and end-users of the research.
- Undertaking teaching duties (including but not limited to assessment, academic advising and project supervision) within the University on undergraduate and postgraduate courses. This may include topics core to the discipline or aligned with research activity or with wider interdisciplinary scope.
- Contribution to relevant service duties, commensurate with the level of appointment, to support efficient operation of the organisation.
- Engagement with relevant committees within the School and/or the University.
- Embedding social responsibility and environmental sustainability within teaching and research practice.

Main Responsibilities (Grade 8 Senior Lecturer)

- Leading the development of large funding grants from research councils and other relevant sources such as industry and non-government bodies to grow significant research activity and develop a team of researchers.
- Development and delivery of world-leading research in the area of fluid mechanics and/or hydraulics.
- Supervision of postgraduate research students and researchers.
- Publication of research in world leading journals and presentation at international conferences and in other fora relevant to stakeholders and end-users of the research.
- Leading the development of innovative curriculum contributions within teaching and learning, both within and outside of the research of area of the applicant.

- Undertaking a full range of teaching duties within the University on undergraduate and postgraduate courses, some which may be outside their immediate research area.
- Contribution to relevant service duties, commensurate with the level of appointment, to support efficient operation of the organisation.
- Engagement with relevant committees within the School and the University.
- Embedding social responsibility and environmental sustainability within teaching and research practice.

PERSON SPECIFICATION (underline refers to senior lecturer only)

Essential Knowledge, Skills and Experience:

- Educated to PhD level or equivalent.
- An established and continuing trajectory track record of research output in internationally leading journal publications or other equivalent recognised forms of research output.
- Capability for, or evidence of developing and leading significant research bids and teams, establishing links with industry and other academic researchers, generating funding streams from research councils, European Commission and industry.
- Good communication skills and an ability to foster interdisciplinary collaboration.
- Good management and teamwork skills.
- Ability to lecture to large classes and supervise group and individual projects at Masters and undergraduate level. Established record of innovation in teaching and learning.
- Membership, or intention to become a Member, of an appropriate Professional Institution (e.g. IEEE, IMechE, IET, ICE, etc).
- Commitment to taking responsibility for the health and safety of others, including the development and implementation of risk assessments.
- Commitment to contributing improvements to advance our inclusive, equal and fair working environment.

The University of Manchester

The University of Manchester (www.manchester.ac.uk) enjoys a global reputation for its research and its innovative approach to learning, with a £1 billion investment in facilities, staff and new buildings across the campus, including new Engineering Buildings that fully opened in 2022. This builds on our tradition of success that stretches back nearly 200 years. The birth of the modern computer, the splitting of the atom, the founding principles of modern economics, the discovery of graphene, and the birthplace of chemical engineering – these and many more world changing innovations have their roots at our University. We are at the forefront of the search for solutions to some of the world's most pressing challenges, with strong collaborative links with industry and public services. These are exemplified through the University of Manchester Research Beacons including Energy and Advanced Materials and research platforms Sustainable Futures and Digital Futures.

As one of the world's leading research institutions and the UK's only university to have social responsibility as a core goal, The University of Manchester is playing a leading role in tackling the SDGs in four ways – through our research, learning and students, public engagement activities and responsible campus operations. The quality and scale of our impact against the UN's Sustainable Development Goals (SDGs) was ranked among the top ten in the world in the Times Higher Education University Impact Rankings in 2022.

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The School of Engineering

Formed in 2019 the School of Engineering brings together over 350 academics and their research teams across a range of engineering disciplines to undertake leading Science-based engineering with Societal Impact. We support engineers and scientists who are technically strong, analytically innovative and creative. Key thematic priorities include Net Zero & Environmental Sustainability, Robotics, Autonomous Systems & AI, Digital Engineering, Advanced Manufacturing, Engineering for Health and Engineering Materials with strong collaboration with the School of Natural Sciences in many areas.

The School of Engineering leads or has strong relationships with research centres and Institutes including the Dalton Nuclear Institute, Tyndall Centre for Climate Change Research, Rolls Royce UTC, National Grid Power Systems Research Centre, Thomas Ashton Institute, Manchester Environment Research Institute, Photon Science Institute, Sustainable Consumption Institute, Global Development Institute, the Modelling & Simulation Centre and the recently formed centre for Robotics & AI. Over the last two-years most of our 350 academic staff, research teams and activities have relocated to new engineering buildings located on our main Campus. Unrivalled in scale in the UK, this £450 Million investment in infrastructure combines Manchester's heritage as the birthplace of the industrial revolution with a wide range of purpose-built teaching and experimental facilities that will deliver a step-change in our approach to solving some of the world's most pressing issues.