



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Summer Research Internship – Future Fluid Dynamics CDT
Faculty of Engineering and Physical Sciences



Salary: Grade 4 (£26,707 - £28,778 p.a.)

Reporting to: Dr Sepideh Khodaparast, School of Mechanical Engineering

Reference: EPSMA1139

Closing date: Monday 01 June 2026

Fixed term (between 6-12 weeks, available from 01 June 2026 - to complete specific time limited work)

Location: Leeds Main Campus

We are open to discussing flexible working arrangements

Summer Research Internship - Future Fluid Dynamics CDT, Faculty of Engineering and Physical Sciences.

Are you interested in gaining first-hand experience of the research environment in fluid dynamics at the University of Leeds? Would you like to explore this opportunity to help you make an informed decision about progressing to postgraduate research? Would you like to develop knowledge, skills and experience to strengthen your application for research degree opportunities?

The [EPSRC Centre for Doctoral Training \(CDT\) in Future Fluid Dynamics](#), hosts an annual internship programme throughout summer. This opportunity is designed to enhance access to postgraduate research for individuals from underrepresented groups, supporting a more diverse and inclusive research community.

The programme allows prospective postgraduate researchers to gain first-hand experience of the research environment in fluid dynamics at the University of Leeds. This experience will assist them to help informed decisions around progression to PGR and to develop relevant knowledge, skills and experience that can strengthen their applications to research degree opportunities. The centre provides advanced training and research opportunities in the field of fluid dynamics, with the aim of equipping future academics and industry practitioners with the interdisciplinary skills required to tackle complex fluid-related challenges across a range of industrial and scientific sectors. Research areas are Engineering and Physical Sciences, Environment, Biological Sciences, or Medicine and Health.

Widening participation

Applications are open to those who have not undertaken a research internship previously, and meet one or more of the following criteria:

- The first in their family to go to university;
- From Black, Asian or other minoritised ethnic groups;
- Neurodivergent (e.g. ASD, ADHD) and/or Disability (e.g. physical impairments, mental health condition, learning difficulties, chronic illness);
- Are female;
- Have caring responsibilities;
- Have been outside of education for 5 or more years;



- Studying/studied at a university that is not a member of the [Russell Group](#).

About the project

Title: Atmospheric water harvesting in plants

In the project, you will investigate how plant leaves naturally capture water from the atmosphere and how these biological strategies might inform future water-collection technologies. Your work will focus on selected plant species that are known or suspected to harvest fog or dew efficiently. You will conduct controlled experimental analyses to quantify how much atmospheric moisture accumulates on their leaf surfaces under defined environmental conditions. This will involve observing droplet formation, mapping distribution patterns, and measuring total water yield.

A central part of this project will be examining leaf surface microstructures, such as trichomes, cuticular patterns, wax crystals, ridges, and regions of varying hydrophobicity and determining how these influence differences in water-collection efficiency. Using microscopy, imaging, and surface characterisation techniques, you will document these structural features and compare them across species. By correlating these traits with your water-harvesting measurements, you aim to identify the physical and biological principles that enable certain plants to capture atmospheric moisture more effectively.

This curiosity-driven research will allow you to explore plant adaptations and their potential applications in addressing water scarcity, particularly in arid and semi-arid environments. Through the project, you will gain hands-on experience in experimental design, quantitative data collection, analysis, and scientific communication. Ultimately, you will contribute to a deeper understanding of how natural systems harvest water—and how these insights can inspire sustainable, bio-inspired engineering solutions.

Overview of the role

To undertake independent research project supervised by an academic at the University of Leeds. This project will take place over 210 hours worked over a period of 6 weeks to 3 months during summer.



Main Duties and responsibilities

- Literature review to gain enough knowledge on the topic;
- Experimental characterisation of plant leaves and investigations of their water harvesting capabilities;
- Experimental data to be processed using digital image processing techniques;
- Statistical analysis to derive final conclusions.

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.

Developmental benefits

In this discovery-driven research project, the intern will develop various research skills including reading and analysing of scientific literature. They will achieve hands-on experimental experience, including advanced microscopy techniques. Through data analysis and scientific discussion of findings this project provides an opportunity for the development of analytical thinking that is critical to postgraduate research.

Qualifications and skills

Qualifications

- Open to graduates or current second- or third-year undergraduates eligible for the Home (UK) fee-rate at postgraduate research (PGR).

Essential

- Curiosity and willingness to learn skills and techniques;
- Critical thinking;
- Good verbal and written communication skills;
- Ability to work both independently and as part of a team;
- Project specific:
 - Interest in physics of fluids and environmental science;
 - Practical basic laboratory skills;
 - Basic analytical or computing skills.



Desirable

- Project specific:
 - Experimental skills;
 - Coding for image processing;
 - Knowledge of material science;
 - Experience with imaging and optical systems;
 - Basic knowledge of thermodynamics and/or fluid dynamics.

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.

Please upload a supporting statement (Word or PDF) with the following details:

- An **introduction** to yourself and a **brief overview** of why you are applying for your chosen project and the internship;
- An outline demonstrating how you meet all **essential** and **desirable criteria** in the job description. Please address each criterion separately, clearly referencing the specific criterion;
- A description of which **widening participation criteria** mentioned in the job description you satisfy.

Contact information

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

[Dr Sepideh Khodaparast](#), Associate Professor

Email: S.Khodaparast@leeds.ac.uk

OR

Patricia Grant, Centre Manager

Email: P.Grant@leeds.ac.uk



Additional information

Faculty and School Information

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

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.

We have identified that women are currently underrepresented in this role and particularly welcome applications. 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.

