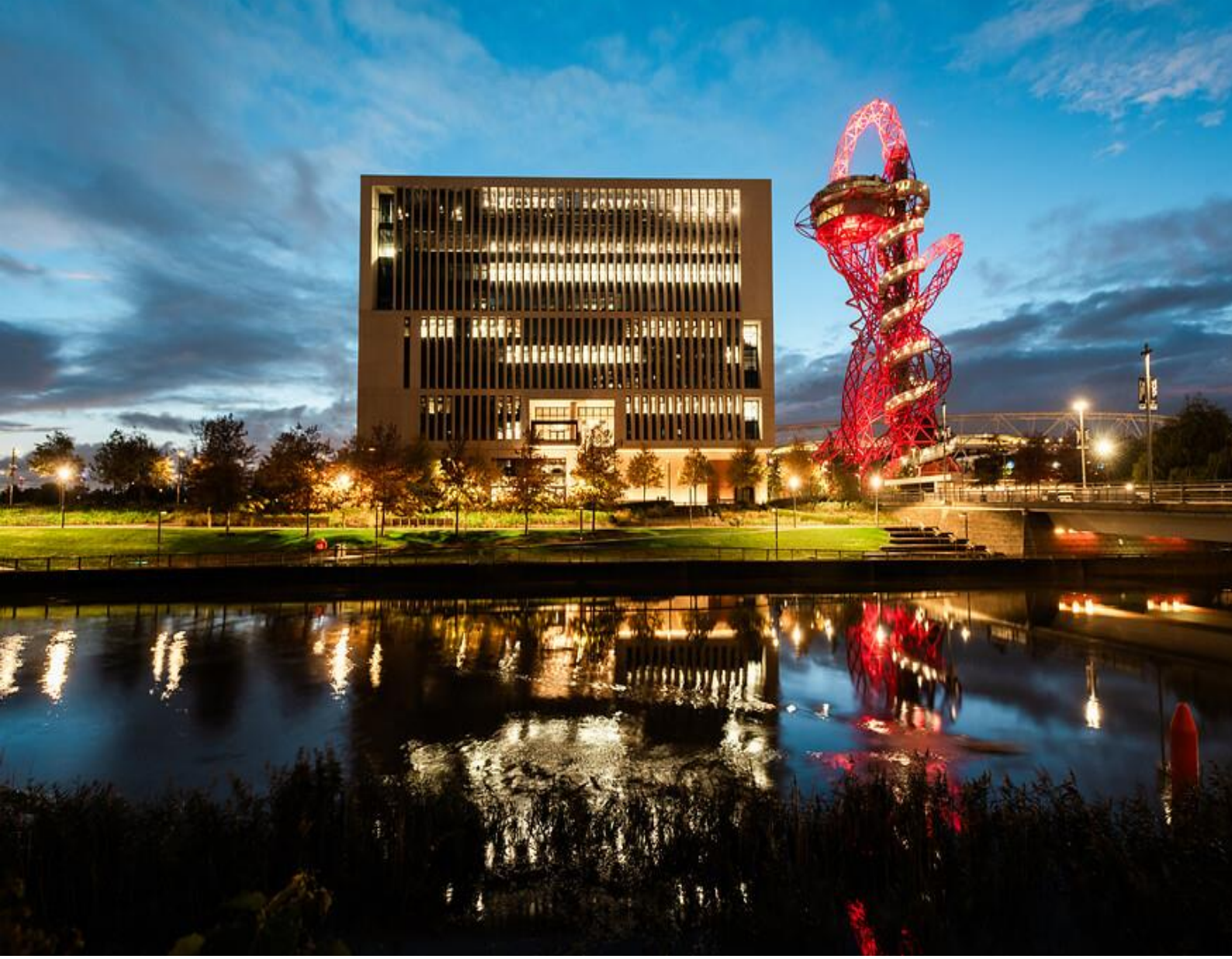


HORIBA Professor of Advanced Propulsion Technologies &
Director of Advanced Propulsion Lab

University College London

Society

UCL

Candidate Pack

Contents

1. Executive Summary

UCL is one of the world's top ten universities, with broad disciplinary excellence in research, innovation, education and impact

UCL invites applications for the role of **HORIBA Professor for Advanced Propulsion Technologies & Director of Advanced Propulsion Lab.**

The post sits within the **Advanced Propulsion Lab (APL)** in the Marshgate Building of the UCL East campus located in the London borough of Stratford. The campus is new, hosting world-class collaborative research laboratories across several disciplines.

The APL brings together researchers from the UCL departments of Chemical Engineering and Mechanical Engineering, with this post being a joint appointment between the two departments, generously supported by **HORIBA**, a world leading manufacturer of precision instruments for measurement and analysis, and a long-standing partner of UCL.

The appointed person will be expected to lead activities including research and education, working collaboratively with colleagues in the APL, with the Departments of Mechanical Engineering and Chemical Engineering, and more widely across the faculties and departments at UCL.

UCL is committed to an inclusive and supportive culture for all. In recruiting, we welcome the unique contributions that everyone can bring in terms of their education, opinions, culture, ethnicity, race, sex, gender identity and expression, nation of origin, age, languages spoken, religion, disability, sexual orientation and beliefs. We continually strive to have the systems in place to ensure that all members of the university have equal access to opportunities, reach their full potential and maintain a work-life balance.

UCL is being assisted in the appointment process by executive search firm Society. To book a confidential conversation, contact Kayley West at **Kayley.west@society-search.com**.
To apply online please upload your CV via Society's website **here.**

The deadline for receipt of applications is **Tuesday, 9 September 2025.**

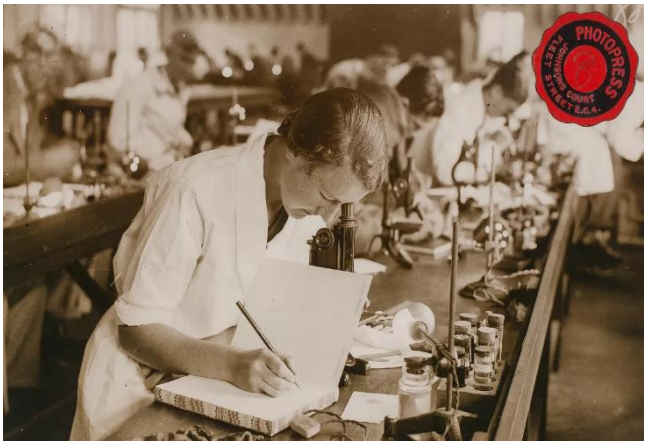
2. About UCL

University College London (UCL) is one of the world's leading universities, recognised for its academic excellence, global outlook, and commitment to impact. Mainly located in the heart of London, UCL combines a rich history with a forward-thinking approach to education, research, and innovation, a tradition that is being continued at the new campus at UCL East.

History

Founded in 1826, the university was established to open higher education to all who could benefit from it, regardless of background or belief. This progressive spirit continues to shape our mission today: to pursue excellence while making a meaningful contribution to society. UCL are deeply committed to equality, diversity and inclusion, fostering an environment where all staff and students are valued and supported to thrive.

Inspired by the radical thinking of philosopher Jeremy Bentham, UCL was also the first university in England to welcome women on equal terms with men from 1878, and remains committed to access, equity, and academic excellence to this day.



1878: UCL becomes the first university in England to welcome women to university education. Source: UCL website, click **here** to find out more.

Academic excellence

The university spans a broad and distinguished range of academic disciplines across 11 academic faculties covering over 400 undergraduate programmes and 700 post-graduate programmes. UCL so far counts over 465,000 alumni in over 190 countries.

The UCL community is both prestigious and diverse, including 32 Nobel Prize winners. With over 50,000 students from more than 150 countries and a staff body of around 18,000 – nearly a third of whom come from outside the UK – UCL is truly international in character and outlook.

UCL is dedicated to being a global leader in integrating research and education. Our commitment to academic excellence is reflected in the 2021 Research Excellence Framework (REF2021) where UCL was ranked second in the UK for 'research power'—a measure combining the quality and volume of our research. An impressive 93% of UCL's research was assessed as either 'world-leading' or 'internationally excellent'. In the 2023 Teaching Excellence Framework (TEF), UCL received a Gold rating for Student Outcomes and a Silver rating for Student Experience, resulting in an overall Silver award.

Location and campus

UCL has traditionally been in the heart of Bloomsbury, central London, where UCL's main campus is surrounded by some of the world's most prestigious cultural and academic institutions — including the British Museum, British Library, and many of London's top hospitals and research centres. The university has recently expanded with the opening of UCL East, a pioneering new campus on the Queen Elizabeth Olympic Park in Stratford. UCL East reflects our mission to engage new communities and lead innovation in areas such as sustainability and net zero, technology, and the creative industries.

Across our campuses, UCL offers world-class teaching and research facilities, including specialist laboratories, libraries, museums, and collaborative learning environments. Our infrastructure continues to evolve in line with our commitment to sustainability and the highest standards in academic delivery.

Faculty and departments

The University has 11 faculties: Art & Humanities, Bartlett (Built Environment), Brain Sciences, Engineering Sciences, IOE Faculty of Education and Society, Laws, Life Sciences, Mathematical & Physical Sciences, Medical Sciences, Population Health Sciences and Social & Historical Sciences.

The Faculty of Engineering Sciences comprises ten academic departments which undertake research and teaching across a great range of disciplines. Our scientists and engineers take discoveries from life sciences, pure mathematics, psychology and many other areas, mix them together, add their own innovations and produce solutions to tackle the world's global challenges. The Faculty of Engineering Sciences is a dynamic and growing Faculty with a strong vision and desire to use our talents to 'Change the World'. Within the new Advanced Propulsion Lab (APL) and working with a broad range of disciplines in partnership with different engineering departments and industry, advance energy sources research at UCL spans from fundamental science to applied engineering.

The **Department of Chemical Engineering** is routinely recognised among the very top departments in Europe and among the top 20 departments in the world in the QS World University Subject Rankings. The Department has an extensive research portfolio across a wealth of areas, from the molecular scale to large industrial plants and enterprises. The challenges of decarbonizing the transport sector, and developing the propulsion systems of the future, are increasingly falling within the remit of chemical engineering and the Department is taking a leading role in developing these technologies (e.g. batteries, supercapacitors, fuel cells) and in educating engineers and scientists to deliver the next generation of propulsion solutions.
The Department is also the home of the Electrochemical Innovation Lab (EIL), which has a world-leading reputation for developing electrochemical technology in the service of society.

The Department of Mechanical Engineering has for 175 years pioneered the development of engineering education and was the first Mechanical Engineering Department in England to introduce laboratories as part of engineering education. UCL Mechanical Engineering is home to world-leading research divisions in Biomechanical Engineering; Energy and the Environment; Naval Architecture and Marine Engineering; and Materials, Structures and Manufacturing. With the department lies specific expertise in electrical and hybrid drive system design and manufacture. Advanced Propulsion Engineering research is from a whole systems engineering approach for all transport modes but with particular in depth focus on road, marine and aerospace.

Leadership team

Eva Sorensen
Professor & Head of Chemical Engineering

Richard Bucknall
Kennedy Chair & Head of Mechanical Engineering

Andy Nisbet
Dean of Faculty of Engineering Sciences

3. The Advanced Propulsion Laboratory

The **Advanced Propulsion Lab (APL)** is a state-of-the-art centre for electrical systems engineering, focused on the development and characterisation of high-power, zero-carbon propulsion technologies. Designed to support applications across automotive, marine, rail, aerospace and other industrial sectors, the APL addresses some of the most pressing challenges in sustainable transport, tackling a number of the UN's Sustainable Development Goals such as Climate Action, Affordable & Clean Energy as well as Sustainable Cities and Communities.

Research at the APL is driven by the critical goal of decarbonising the transport sector—across land, sea, and air. The APL continues to grow its interdisciplinary teams and foster bold, disruptive ideas in support of the global decarbonisation agenda. Taking a holistic molecules-to-systems approach, the lab reflects the breadth and ambition of expertise being sought through this recruitment round.

Advanced Propulsion Engineering research is closely integrated within UCL's education provision. The APL offers a career-focused education at master's level, including the world-renowned MSc in Power Systems Engineering, which emphasises systems-level approaches to emerging zero-emission technologies, and the new MSc Advanced Propulsion with focus on developing batteries, fuel cells and electric machines on an industrial scale. Our students are actively involved in high-profile international competitions, including fuel-cell powered vehicles for the Shell Eco-marathon, Formula Student with electric drivetrains, and autonomous e-boat races.

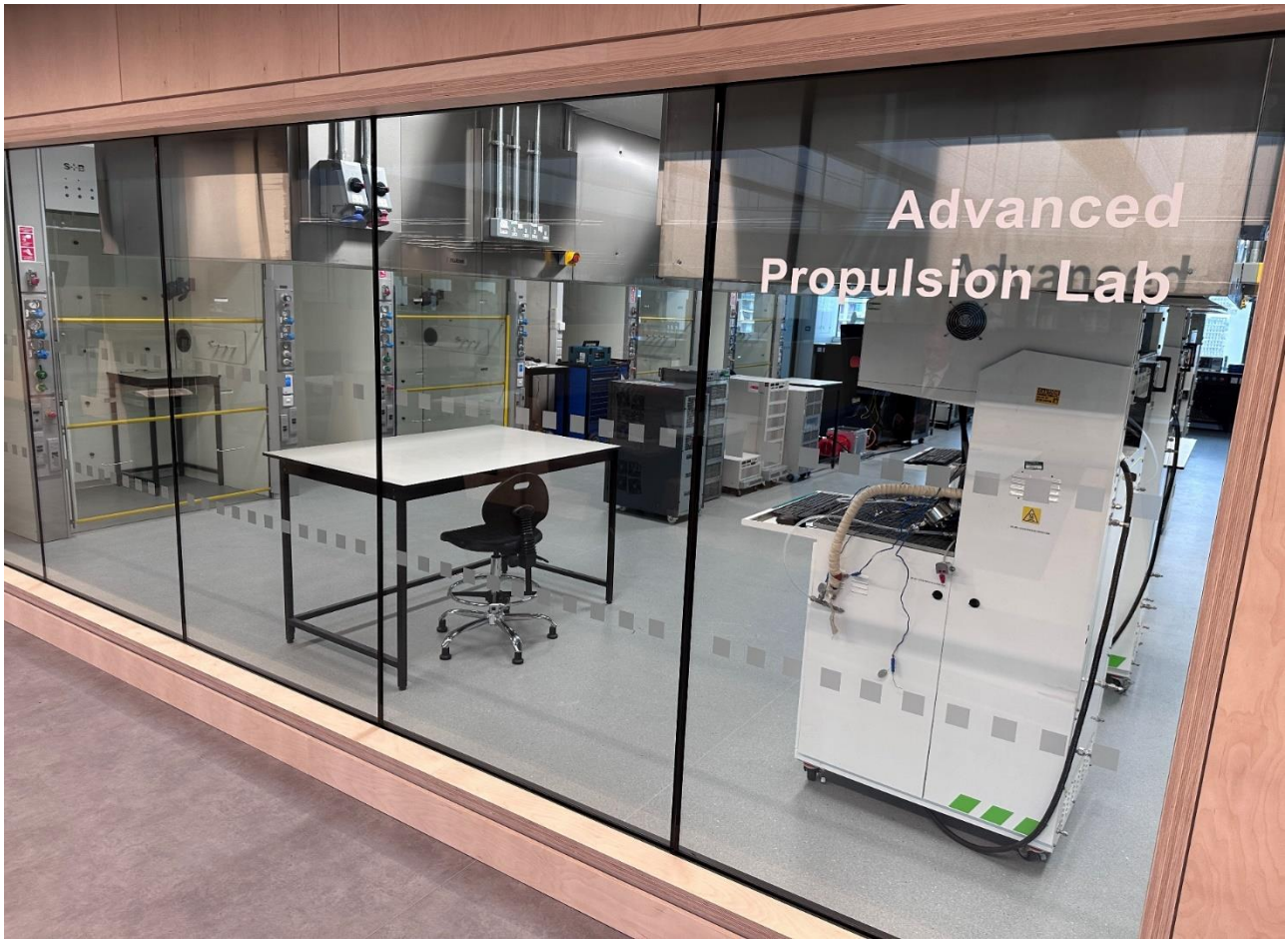
Our vision for APL is to work at the leading edge of discovery to decarbonise the international transport sector and make it sustainable. Specifically, the APL vision is the ongoing development of a world leading facility to provide actual solutions, working from concept to application, with industry and in alignment of governmental goals, but importantly developing novel solutions. Expanding beyond the existing facilities at UCL East will be encouraged as success accelerates.

HORIBA

UCL researchers play a leading role in accelerating the transition from fossil fuels to zero-emission transport, thanks to a new strategic partnership with Japanese manufacturer HORIBA—a global leader in vehicle propulsion measurement and testing systems.

As part of this collaboration, HORIBA has funded the Chair in Advanced Propulsion and two PhD studentships within the UCL Advanced Propulsion Lab (APL). The appointed person will drive innovation in propulsion research methods, supporting the development of next-generation electric vehicle technologies.

Together, UCL and HORIBA will pioneer more efficient, sustainable propulsion systems and help shape the future of clean transport. A key part of this partnership is the commitment to training the next generation of specialist scientists and engineers, supporting UCL's wider mission to create a more sustainable, zero carbon future for all.


Advanced
Propulsion Lab

3. Role Description

This role will provide leadership on the development of research promoting the future of advanced propulsion

UCL now wish to appoint a professorial staff member to contribute to and lead the Advanced Propulsion Laboratory, and a new Chair has been specifically created for this position. The appointed person will be expected to lead activities including research and education, working collaboratively with colleagues in the Advanced Propulsion Laboratory, with the Departments of Mechanical Engineering and Chemical Engineering, and more widely across the faculties and departments at UCL.

Appointment to the role of Professor is a permanent position. Appointment to the role of Director is offered for a term of 5 years in the first instance, with the potential for renewal.

The recruitment represents an exciting opportunity to enhance our critical mass and to establish new, multidisciplinary research activities in a modern, state-of-the-art laboratory environment.

Reporting Line: Dean of Faculty of Engineering Sciences, with dotted line to Heads of Chemical Engineering and Mechanical Engineering.

Main Purpose of the Job

- To lead on the development of research promoting the future of advanced propulsion technologies in areas including, but not exclusive to (not in order of priority):
  - Electric and hybrid propulsion system solutions using electrochemical and conventional means for transport applications across sectors;
  - Development and scale-up of next generation materials in battery and fuel cell technology;
  - Modelling techniques for propulsion systems, including their subsystems and constituent materials;
  - Novel approaches to propulsion system management including control strategies, diagnostics and performance optimisation
- Carry out and publish high-quality world-class research which complements the existing departmental and Faculty activities, secure research grant funding to support a vibrant research programme in the field of Advanced Propulsion.
- Develop national and international networks and partnerships with industry, other academic institutions, government, and other relevant organisations to maximise research activities.
- Support postdoctoral research staff and supervise PhD students.
- Contribute to teaching existing or new taught modules in the areas relevant to the post, including lectures and project supervision.
- Participate in administrative, outreach, and enterprise activities that support both departments, the faculty, UCL East and wider UCL.
- To lead on Health, Safety and Environment aspects.
- A willingness to actively contribute to the development of both the Advanced Propulsion Lab (APL) and UCL East's academic vision.

Duties and Responsibilities

- Develop and lead a programme of original research in the broad area of Advanced Propulsion Technologies.
- Deliver multidisciplinary research and teaching activities that support UCL East priorities.
- Secure research grant funding in accordance with UCL Financial Regulations and the

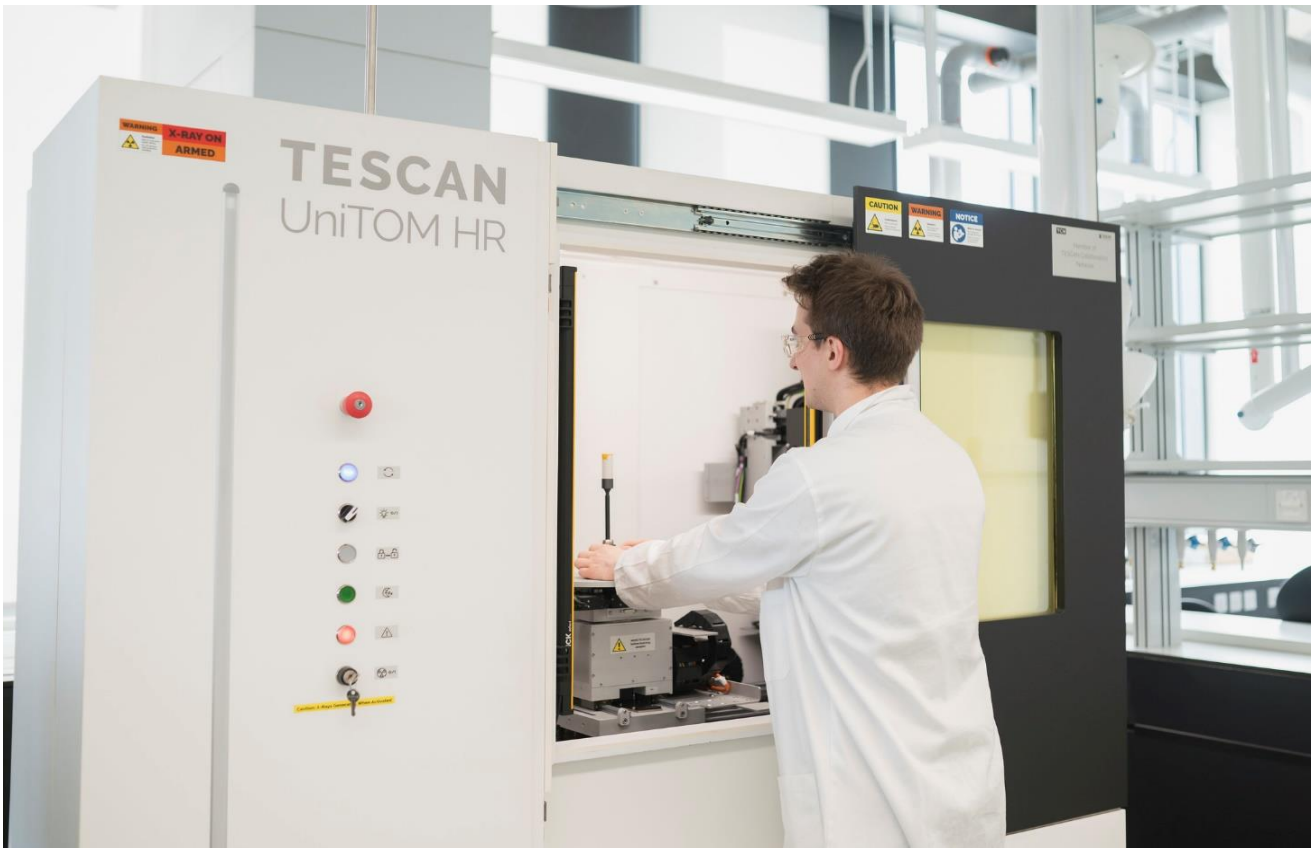
conditions of funding bodies and report to funding bodies and others as needed.

- Recruit, manage and lead researchers and help develop their careers.
- Participate in, and chair, relevant committees at UCL East and the departments, and undertake relevant leadership roles within the Faculty and UCL.
- Engage at national level with government, industry and other academic institutions, establishing UCL East's reputation in policy, research and innovation within advanced propulsion technologies.
- Short course development that supports transport sector transition to decarbonized propulsion solutions
- Ensure that research outputs are recorded, analysed and written up in a timely fashion and to deadlines.
- Lead and assist with curriculum development, including learning materials and schemes of work.
- Teach at undergraduate and postgraduate level, including laboratory supervision, lectures and tutorials and participating in the development, administration and marking of different forms of assessment.
- Provide pastoral care and support to students.
- Supervise and/or assist with supervision of undergraduate, postgraduate taught and graduate research students.
- Actively promote UCL's academic values of interdisciplinarity, collaboration, and public engagement.
- Maintain own continuing professional development.
- Maintain awareness of, and actively follow, all UCL policies and Fire and Health & Safety Regulations.
- Support and advance UCL's equality, diversity and inclusion ambitions.

Benefits

- UCL offers generous pension provision. You will be offered membership of the Universities Superannuation Scheme.
- You may apply to spend up to 40 working days in each year on projects outside your employment duties, such as consultancy, spin-out activity and membership of research councils and other bodies. There is no limit to earnings from these activities without deduction from salary.
- A relocation supplement of up to £10,000 may be payable where it is necessary to relocate from within the UK, and up to £20,000 if from outside of the UK, to take up an appointment at UCL. For more information, please click **here.**

This job description reflects present requirements. As duties and responsibilities evolve, it will be reviewed periodically with the post holder and amended if necessary.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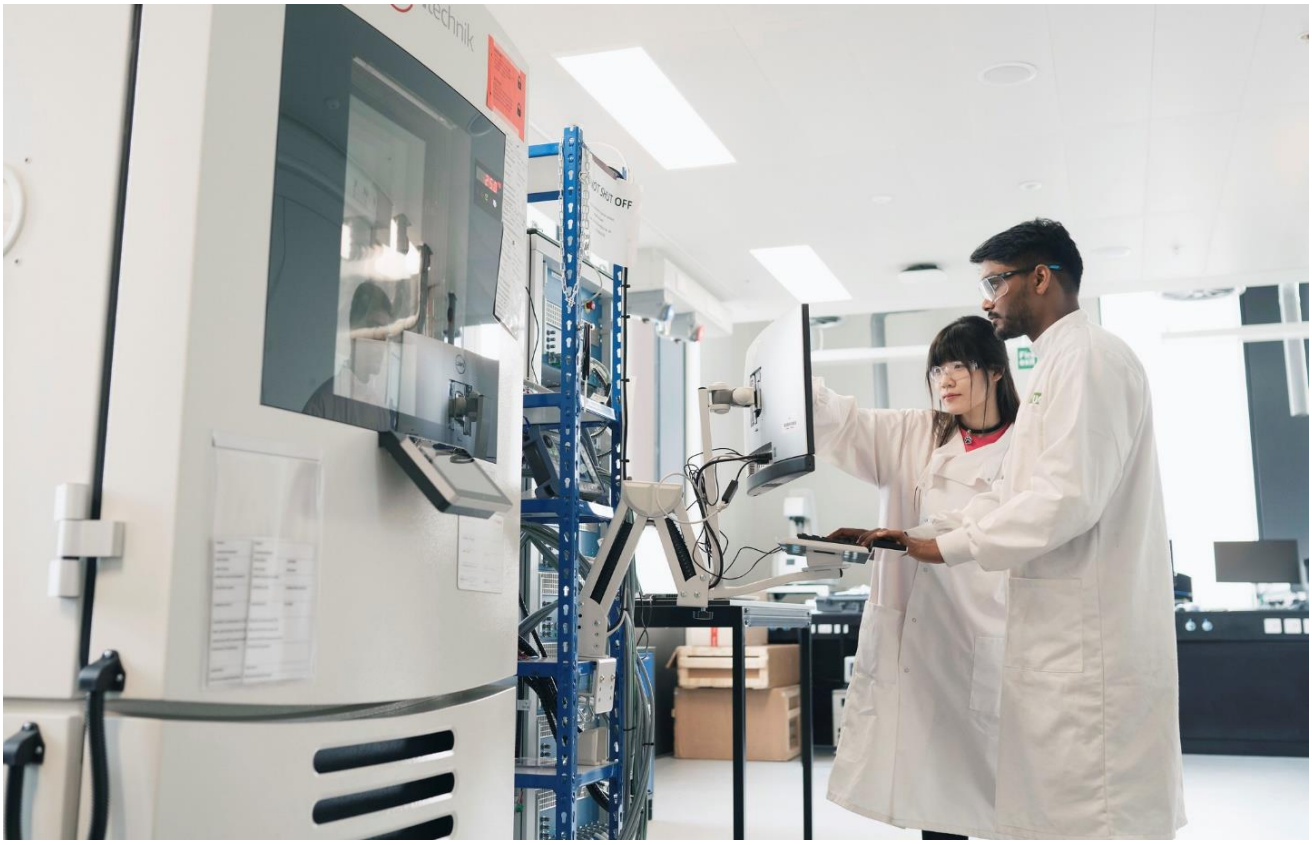

4. Person Specification

The successful candidate will demonstrate a strong alignment with the core values and strategic priorities of UCL, particularly in relation to research excellence, partnership working, inclusive education, and academic leadership. The following criteria will be used to assess candidates during the recruitment process:

Qualifications, experience and knowledge

- A PhD or EngD in engineering, chemistry, physics, or a relevant discipline.
- An undergraduate degree in engineering, chemistry, physics, or a related field.
- A substantial international reputation in scholarship and research, or equivalent industrial experience, alongside an excellent publication record in high-impact international journals within disciplines relevant to the post.
- Experience of engaging in partnerships with organisations in education, the public sector, or industry—such as collaborative research or public engagement.
- A track record of securing research funding and fulfilling reporting obligations to funders is desirable.
- Demonstrated experience in mentoring and supporting students, PhD/EngD researchers, early career researchers, or direct reports.
- Proven ability to lead and manage a research team, and to train, support, and motivate students or junior colleagues.
- Experience in leading positive culture change or contributing to the creation of an inclusive and forward-thinking academic environment.
- Teaching experience at undergraduate and/or postgraduate level in engineering or a relevant discipline is desirable.

Skills and abilities

- Proven capability to conduct high-quality, original research in areas relevant to the role.
- Demonstrated skills in designing and delivering inclusive and excellent undergraduate or postgraduate teaching are desirable.
- Excellent interpersonal, verbal, and written communication skills.
- Great attention to detail and the ability to manage complex tasks and competing priorities.

Personal attributes

- A committed and effective advocate for equality, diversity, and inclusion within the academic community.
- Strong interpersonal and relationship-building skills, with the ability to work effectively with students, colleagues, and external partners.
- Demonstrated leadership qualities, with a clear commitment to supporting and motivating others through emotionally intelligent and inspirational leadership.
- A robust approach to project or task review, underpinned by evidence-based planning and decision-making.
- Excellent time management skills and the ability to work under pressure to meet deadlines.
- A collaborative mindset, with a commitment to contributing positively to a team environment.

5. Appointment Details and How to Apply

UCL is being assisted in this appointment process by the executive search firm Society **(www.society-search.com).**

Applications should consist of:

1. A concise covering letter addressing the criteria in the Person Specification (2 pages max).
2. An up-to-date curriculum vitae including a publication list.
3. A description of the research plans you propose to pursue at UCL, including how the proposed research would contribute to the APL and the associated departments' research profiles (2 pages max).
4. A description of your teaching experience to date
(1 page max).
5. Names and contact details of three referees (although referees will only be approached at the final stage of the process, and only with your express permission).

General advice on how to write a **strong CV** and **strong covering letter** can be found on Society's website.

To upload your documents via Society's website, click **here**.

The deadline for receipt of applications is midday (BST) on Tuesday, 9 September 2025.

Shortlisted candidates will be invited to interview from September 2025.

An appointment will be made subject to receipt of satisfactory references. The appointed candidate will be offered a salary that is commensurate with their experience and the seniority of their new role.

We are committed to ensuring that anyone can access our application processes. This includes people with hearing, sight, mobility, and cognitive impairments. Should you require access to this document in an alternative format, wish to apply in a different format, or need any other reasonable adjustments made for you (including at interview), please contact us at **inclusion@society-search.com**. We also welcome suggestions or comments about any more general access improvements we should consider.

Society is a global executive search firm and a certified B Corporation. 10% of our profits go to charitable causes through The Society Foundation. With colleagues in the United Kingdom, the United States, and New Zealand, we solve senior hiring challenges for responsible businesses and purpose-driven organisations around the world.

We believe that the right candidate, placed in the right organisation at the right time, can initiate a chain reaction of transformative change that will help to deliver a more inclusive and sustainable future.

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