



UNIVERSITY OF  
**BATH**

# Professor of Sustainable Hydrogen Energy

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Candidate Pack



Summer 2024



# Welcome

Thank you for your interest in the post of Professor of Sustainable Hydrogen Energy in the Faculty of Engineering & Design at the University of Bath. Our leadership in the field of Hydrogen is well known nationally and, more broadly, we are one of the most innovative and highly-performing universities in the UK.

The faculty is a vibrant and diverse community with real strength in breadth, comprising four departments:

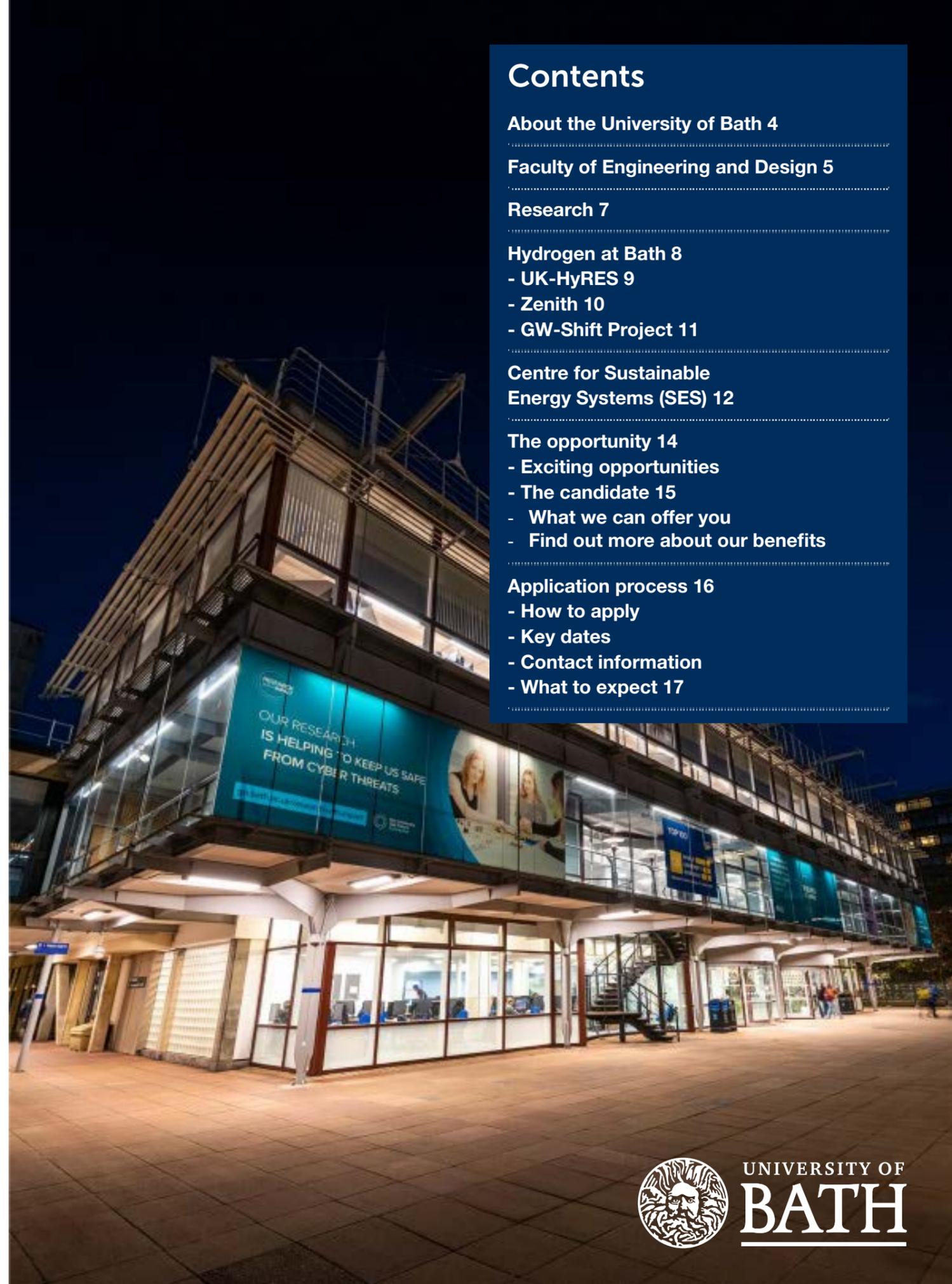
- Architecture & Civil Engineering
- Chemical Engineering
- Electronic & Electrical Engineering
- Mechanical Engineering

Cutting across these departments is a strong research culture, with well-resourced Research Centres aimed at interdisciplinary global challenge. These centres have the critical mass and support to develop large research initiatives to address the environmental, economic, and social research grand challenges faced by humanity. This post will be affiliated to our Centre for Sustainable Energy Systems, and specifically at the role which Hydrogen will play in our energy transition.

In REF2021, all of our impact in the Engineering Unit of Assessment was rated world-leading or internationally excellent, and we are committed to attracting the best and the brightest to us to ensure that we have real, positive impact on the world. We are open to discussions around coming to Bath possibly with colleague(s) to enable a seamless and stronger transition. While demonstration of an outstanding track record in research is important, the potential for such achievement in the future is crucial, opening the possibility for someone who wishes to make an accelerated move to Full Professor. This post should suit anyone ambitious for an excellent research-focused career in academia.

In our Faculty, we work hard to ensure that our culture is right. We know that when we have the culture right, all success follows quite naturally. You will join a team deeply committed to equity, diversity and inclusion. You will be a generous leader, with kindness a key feature. You will want to bring others along with you to share success, and we can guarantee that support for you too. It makes our Faculty a special place to work and play. Join us.

**Professor Tim Ibell**  
Dean of the Faculty of Engineering & Design



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# About the University of Bath

Over the past fifty years, the University of Bath has evolved into an institution recognised worldwide, hosting over 19,000 students from 147 nations. Our commitment is to provide students with a comprehensive education, which includes: superior teaching led by research-driven academics; mandatory placements in our undergraduate programmes to enhance job readiness; an expansive and increasing selection of postgraduate studies; and extracurricular activities, highlighted by our award-winning sports facilities. The outcome is a highly engaged student population, distinguished by their quality, achievements, and high levels of satisfaction.

We foster a collaborative learning environment where students and faculty work closely in both educational and research endeavours. This collaboration often proves transformative for students and extends its benefits beyond the university, enhancing both local and global understanding. Our faculty work across both traditional and novel disciplines, ensuring our research delivers practical, socially and economically beneficial outcomes. Continued investment in new facilities and staff is key to amplifying our research impact.

The University makes a significant positive impact on the community and local economy, contributing approximately £380 million in Gross Value Added (GVA) to Bath and North East Somerset, and £1.2 billion to the UK economy. We maintain close ties with industry leaders and niche companies alike, and our Innovation Centre is pivotal in nurturing new enterprises.

We pride ourselves on being a dynamic community, embracing intellectual, cultural, sporting, and social pursuits. We are dedicated to leveraging our knowledge and capabilities to address real-world challenges. From its inception, the University was envisioned to stand out through its innovation and inclusivity. Our compact campus fosters a strong sense of community, reinforcing our dedication to collegiality. Our vibrant international alumni network extends our reach globally. By partnering with national and international, industrial, and social entities, we create a space where the social sciences, humanities, arts, engineering, and science converge for the greater good of the global community.



**Ranked 5<sup>th</sup>**  
in the Complete University  
Guide 2024<sup>1</sup>



**Ranked 6<sup>th</sup>**  
in the UK in the Guardian  
University Guide 2024<sup>2</sup>



**Awarded  
Triple Gold**  
in the Teaching Excellence  
Framework (TEF) 2023<sup>4</sup>



**Ranked 8<sup>th</sup>**  
in the UK in The Times and  
The Sunday Times Good  
University Guide 2024<sup>3</sup>



**Top 5**  
for graduate or career  
prospects in three major  
national league tables<sup>5</sup>

**Ranked in the  
Top 150**

universities in the world  
in the QS World University  
Rankings 2024

<sup>1</sup>127 of our subjects are ranked in the top ten.

<sup>2</sup>Ten of our subjects are ranked in the top five.

<sup>3</sup>Nine of our subjects are ranked in the top five.

<sup>4</sup>For the overall assessment and the two underpinning assessments of student outcomes and student experience.

<sup>5</sup>We're ranked 4th in the Complete University Guide 2024, 5th in the Times and The Sunday Times Good University Guide 2024, and 5th in the Guardian University Guide 2024.



## Faculty of Engineering and Design

Within the Faculty, you will discover a vibrant ecosystem spread across key departments: Architecture & Civil Engineering, Chemical Engineering, Electronic & Electrical Engineering, and Mechanical Engineering. Each department stands as a centre of excellence, offering unparalleled opportunities for research and teaching across a range of engineering disciplines.

As part of our team, you will have access to state-of-the-art facilities and the opportunity to collaborate with leading experts in your field. Our interdisciplinary approach not only enhances the depth and breadth of our research but also amplifies its impact on real-world challenges. We are committed to fostering a culture of innovation and inclusivity, where your expertise and insights will contribute significantly to our collective success and the advancement of engineering solutions on a global scale.

This is an opportunity to play a key role in driving forward our mission to develop sustainable, innovative solutions for the world's most pressing problems.



# Faculty of Engineering and Design



## Marcelle McManus

Marcelle is a Professor of Energy and Environmental Engineering and Director of the Sustainable Energy Systems Research Centre at the University of Bath. Her focus is in whole systems and life cycle assessment, which has been her area of focus for over 20 years. She is a Research Director in the UK's Industrial Decarbonisation Research and Innovation Centre (IDRIC) which pulls together academics and industry to help create greener industrial futures. Critical to this is the understanding of the impact of the use and provision of hydrogen and ancillary systems where recent research has focused.



## Tim Mays

Tim Mays is Professor of Chemical and Materials Engineering in the Department of Chemical Engineering with long-standing research interests in sustainable hydrogen energy. He has led large EPSRC-funded research programmes on hydrogen since 2003 and is currently Principal Investigator of the UK Hub for Research Challenges in Hydrogen and Alternative Liquid Fuels (UK-HyRES) and of the Great Western Supercluster of Hydrogen Impact for Future Technologies (GW-SHIFT).



## Tina Düren

Tina Düren is Professor of Chemical Engineering, specialising in molecular simulation for innovative porous materials. Her research spans carbon capture, hydrogen purification, and nanomedicine. As Director of the Centre for Integrated Materials, Processes & Structures, she leads interdisciplinary efforts addressing global challenges like sustainable transport and healthcare materials. Professor Düren's worldwide collaborations bridge material synthesis and practical applications, advancing multifaceted research in this field.

For informal enquiries, please contact Tim Mays or Tina Düren via email:

**Tim Mays:** cestjm@bath.ac.uk

**Tina Düren:** td222@bath.ac.uk

# Research

The Faculty of Engineering and Design at the University of Bath stands at the forefront of addressing global challenges through its cutting-edge research. The faculty's research endeavors are structured around three significant themes: digital, health, and sustainability. This strategic focus is evident in the diverse range of research centres and institutes within the faculty, each dedicated to pushing the boundaries of engineering and design to create impactful solutions for economic, societal, and environmental issues.

The faculty's institutes and centres include:

### Centre for Bioengineering & Biomedical Technologies

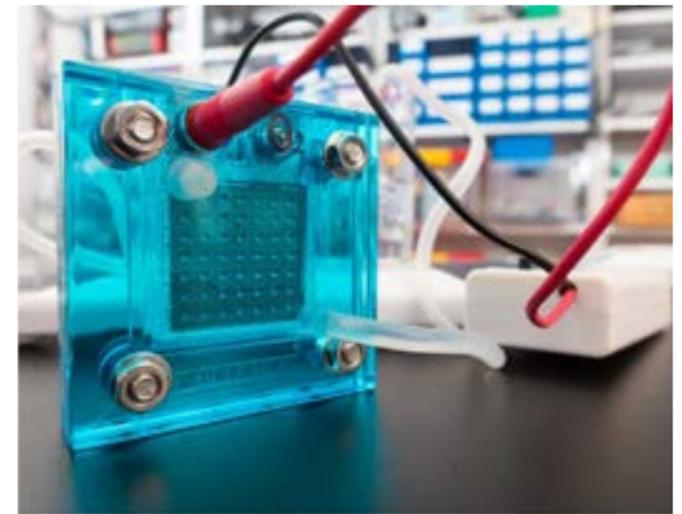
**Technologies:** This centre explores the interface between engineering and the biological sciences. Its research aims to advance healthcare solutions through innovative technologies and methods.

### Centre for Climate Adaptation & Environment Research (CAER)

**Research (CAER):** CAER's work is crucial in the fight against climate change, focusing on developing strategies and technologies for adapting to and mitigating the impacts of climate change.

### Centre for Regenerative Design & Engineering for a Net-Positive World (RENEW)

**RENEW:** RENEW focuses on sustainable design and engineering practices that not only minimize negative impacts but also contribute positively to the environment.



### Centre for Digital, Manufacturing & Design (DMADE)

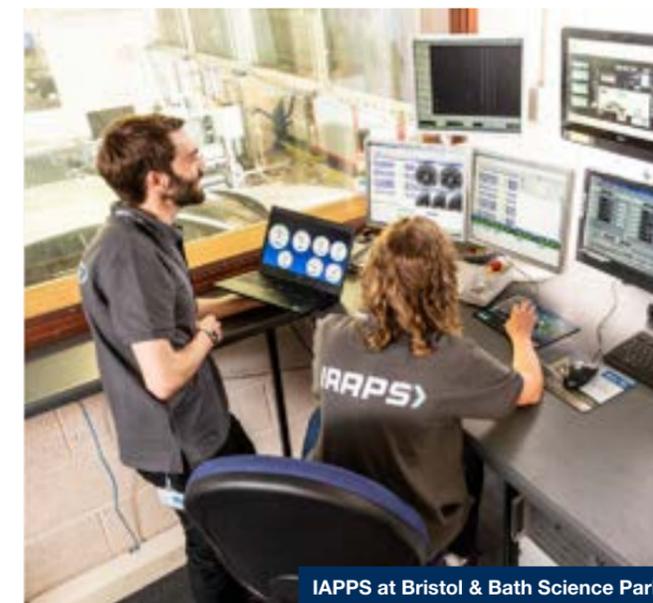
**DMADE:** This centre emphasizes the integration of digital technologies in manufacturing and design processes, enhancing efficiency, creativity, and sustainability.

### Centre for Integrated Materials, Processes & Structures (IMPS)

**IMPS:** IMPS works on the development of new materials and processes that contribute to the advancement of engineering applications, from aerospace to biotechnology.

### Centre for Sustainable Energy Systems (SES)

**SES:** SES is dedicated to developing renewable energy technologies and systems that support the transition to a sustainable energy future.



IAPPS at Bristol & Bath Science Park

Additionally, the faculty collaborates multiple other institutes and centres, including but not limited to The Institute for Advanced Automotive Propulsion Systems (IAPPS) and the Institute for Sustainability (IfS), further highlighting its multidisciplinary approach to research.

These centres and institutes reflect a significant shift in research philosophy – from technology-led to challenge-led research, from individual pursuits to collaborative, multidisciplinary efforts, and from advancements in single disciplines to the integration of innovations across multiple fields. Through this approach, the Faculty of Engineering and Design at the University of Bath not only contributes to the advancement of knowledge and technology but also plays a pivotal role in solving some of the most pressing challenges facing our world today.

# Hydrogen at Bath

The University of Bath is at the forefront of hydrogen research in the UK, underscored by significant grants and collaborative projects aimed at advancing the nation's move towards Net Zero carbon emissions. Leading these efforts are notable figures such as Professor Tim Mays, Professor Marcelle McManus, and their teams, who are deeply involved in pioneering projects and research hubs.

- Research and innovation across the hydrogen value chain
- Strong alignment with Net Zero and related government strategies
- Excellent fit with University's Climate Action policies and research focus area of Sustainability

- £17M EPSRC Supergen funding for hydrogen research consortia led at Bath (2003-22)
- Significant and growing investments on campus (c.£35M current UKRI and other funding)
- R&I involving Engineering, Science, Humanities and Management (> 50 academics)
- Capability, capacity and leadership building; aim to recruit five new academic staff in Engineering, including two professors
- Strong stakeholder engagement

- Bath Beacon: Hydrogen and its Carriers
- UK-HyRES: UK Hub for Research Challenges in Hydrogen and Alternative Liquid Fuels
- ZENTH: EPSRC Prosperity Partnership with GKN Aerospace
- EPSRC Open Fellowship on superconductivity in H<sub>2</sub>-fuelled aircraft
- Innovate UK KTP with ZeroAvia
- GW-SHIFT: EPSRC Place Based Impact Acceleration Account

- Major investments and partnership development in hydrogen at IAAPS with a focus on low carbon propulsion



Claverton Campus



IAAPS at Bristol & Bath Science Park



The UK Hub for Research Challenges in Hydrogen and Alternative Liquid Fuels (UK-HyRES), led by Professor Tim Mays, has been awarded £11 million by UK Research and Innovation (UKRI). This investment is part of a broader £53 million funding initiative to decarbonize the UK's energy sector. The hub aims to become a global center of excellence, delivering sustainable hydrogen and alternative liquid fuel technologies. UK-HyRES focuses on accelerating the uptake of hydrogen and alternative fuels to help the UK achieve its Net Zero targets by 2050, emphasizing the production, storage, distribution, and use of hydrogen and its carriers. This initiative stands as a testament to the University of Bath's leadership in hydrogen research, aiming to address key challenges and promote sustainable solutions.

- UK Hub for Research Challenges in Hydrogen and alternative Liquid Fuels
- Five-year, £10.7M EPSRC national research hub led by the University of Bath from 1/6/23

- Initially, eight PDRAs, 13 PhD students in Hub to carry out research across the value chain to accelerate the uptake of low carbon hydrogen technologies
- £15.3 leverage co-funding from > 30 industry, civic and university partners
- £4.1M flexible funding pot



## Bath Beacon for Future Fuels

Professor Tim Mays also leads the interdisciplinary Bath Beacon for Future Fuels, focusing on hydrogen and its carriers. This beacon aims to establish the University of Bath as a multi-disciplinary hub for research excellence, impact, and engagement in future, zero-carbon fuels, aligning with the UK's Net Zero target. It addresses technical challenges in the production, storage, distribution, and end use of hydrogen and its carriers, aiming to displace oil-based transport fuels and natural gas with more sustainable alternatives.

## Zenith

The University of Bath is spearheading an ambitious project named ZENITH (Zero Emission: The Next Generation of Integrated Technologies for Hydrogen), which aims to revolutionize the aerospace industry by developing zero-emission aircraft. This initiative places the University at the forefront of sustainable aviation, aligning with the UK's Net Zero 2050 target. Bath's collaboration with GKN Aerospace, a leading global supplier to aircraft and engine manufacturers, underscores the project's strategic importance in advancing hydrogen-based fuel technologies for aviation.

Under the leadership of Professor Richard Butler from the Department of Mechanical Engineering, ZENITH focuses on pioneering research across four key areas: Liquid Hydrogen Storage, Solid State Storage, Optimised Performance, and Sustainable Manufacture. This multidisciplinary effort involves a team of Bath's top academics and industrial specialists, drawing expertise from the Institute for Sustainability, as well as the Departments of Mechanical Engineering, Chemical Engineering, Chemistry, and Mathematical Sciences.

The partnership with GKN Aerospace and the involvement of a wide array of Bath's academic talent underscore the University's commitment to leading in the area of sustainable aviation. By tackling the fundamental challenges of hydrogen-fuelled aircraft, the University of Bath is not only enhancing its strategic relationship with GKN but also positioning itself and the UK as leaders in the emerging market for zero-emission aircraft.

These initiatives underscore the University of Bath's commitment to leading the transition to sustainable energy sources, leveraging the expertise of its faculty and the collaborative power of regional and national partners. The focus on hydrogen as a key element of the UK's strategy to achieve Net Zero emissions by 2050 positions the university as a pivotal player in the nation's energy future.

- Zero Emission: The Next Generation of Integrated Technologies for Hydrogen Storage
- Five-year £1.5M EPSRC Prosperity Partnership between the University of Bath and GKN Aerospace from 1/11/23

- Four Bath PDRAs and eight PhD students working on research challenges associated with commercial aircraft fuelled by low carbon liquid hydrogen
- £2.8M leveraged co-funding

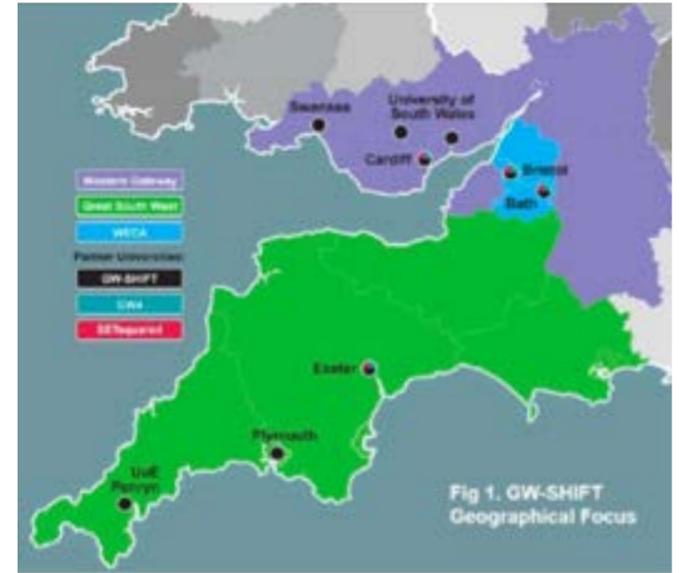


## GW-SHIFT Project

Another significant project, GW-SHIFT (Great Western Supercluster of Hydrogen Impact for Future Technologies), led by Professor Tim Mays, has secured £2.5 million from the EPSRC. This project aims to create a supercluster of hydrogen expertise and innovation in the UK's South West and South Wales, focusing on decarbonizing transport and energy. GW-SHIFT will support innovative research and activities to develop a thriving low carbon hydrogen supercluster, addressing key themes such as production, storage and distribution, and conversion and transport. This project highlights the collaborative effort across academic institutions, civic organizations, and industry partners to foster a knowledge-intensive green economy.

- Great Western Supercluster of Hydrogen Impact for Future Technologies
- £2.7M EPSRC Place Based Impact Acceleration Account from 1/1/24 led by Bath

- Multi-partner, multi-site project in the South West of England and in South Wales with strong civic and industrial support
- Connect and consolidate desperate regional interests to establish and sustain a low carbon eco-system
- £1.7M leveraged co-funding from > 25 regional partners



For more detailed information about these projects and the University of Bath's role in hydrogen research, you can visit the official University of Bath website and specific pages dedicated to the UK-HyRES hub, the Bath Beacon for Future Fuels, and the GW-SHIFT project.

[bath.ac.uk/announcements/hydrogen-research-hub-awarded-11-million-to-help-uk-reach-net-zero-targets/](https://bath.ac.uk/announcements/hydrogen-research-hub-awarded-11-million-to-help-uk-reach-net-zero-targets/)  
[bath.ac.uk/campaigns/bath-beacon-future-fuels-hydrogen-and-its-carriers/](https://bath.ac.uk/campaigns/bath-beacon-future-fuels-hydrogen-and-its-carriers/)

# Centre for Sustainable Energy Systems (SES)

The University of Bath's Centre for Sustainable Energy Systems is at the forefront of the global transition towards more sustainable and renewable energy sources.



## A Multidisciplinary hub for Energy Research

The Centre embodies a collaborative spirit, bringing together researchers across various domains of energy research. From generation and demand to systems integration and minimising environmental impacts, the Centre is dedicated to enhancing energy efficiency and optimising sustainability. Its focus spans the whole value chain: energy production, storage and networking, and consumption. This broad scope facilitates a comprehensive approach to addressing energy challenges, leveraging technical advancements in renewable power generation, grid stability, and energy storage methods.

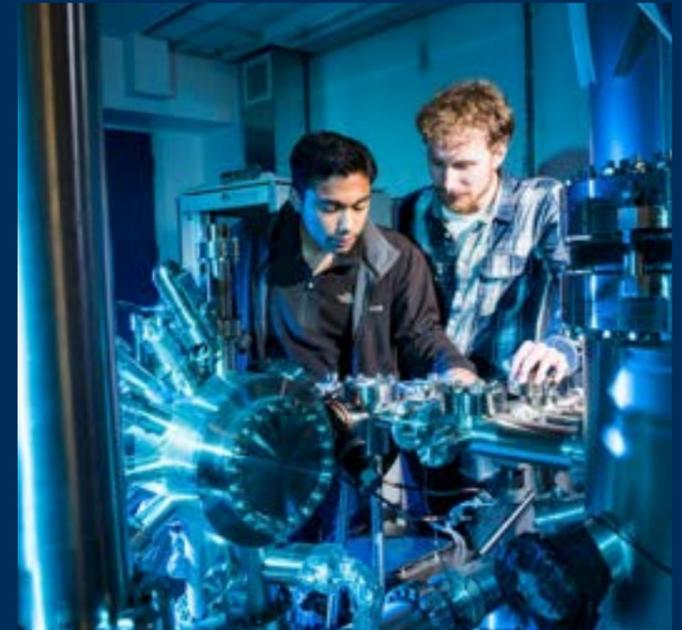
## Driving Innovation in Renewable Energy

The commitment to green hydrogen production, particularly using bio-based resources, highlights the Centre's dedication to circular and sustainable processes. This approach not only enhances the economics of energy processes but also ensures their sustainability, demonstrating the potential for waste to be transformed into valuable energy resources.

## Expanding Research and Collaboration

With a strong base in engineering, the Centre is actively seeking to broaden its research capabilities by integrating expertise from behavioural sciences, change management, social sciences, and beyond. This inclusive approach aims to foster a comprehensive understanding of sustainable energy systems, encouraging a collaborative effort towards developing renewable technologies and sustainable energy solutions.

**The Centre for Sustainable Energy Systems** at the University of Bath is not just a place for technological innovation; it is a community committed to driving the change towards a sustainable energy future. By inviting collaboration across disciplines, it sets the stage for ground-breaking advancements in sustainable energy.



# The opportunity



## Professor of Sustainable Hydrogen Energy

The University of Bath is committed to sustainability, including a significant focus on hydrogen research—a field in which we are national leaders. We have further ambitions to improve our standing and impact. Our Institute for Sustainability, the Centre for Sustainable Energy Systems and our partner, IAAPS (based at Bristol and Bath Science Park), are all working together to support these ambitions. To bolster our research efforts, we are looking to appoint two Professors of Sustainable Hydrogen Energy in series to spearhead high-profile research with a global impact.

These new opportunities are broad-based. The Faculty of Engineering and Design houses four top-performing departments: Architecture & Civil Engineering, Chemical Engineering, Electronic & Electrical Engineering, and Mechanical Engineering. Our research spans the entire hydrogen value chain, meaning that there is an opportunity to work with or within a relevant department based on their specific area of research.

### Exciting opportunities

The University of Bath has emerged as a leading force in hydrogen research, holding one of the largest portfolios of hydrogen research grants in the UK. The prospect of joining our team as a Professor of Sustainable Hydrogen Energy is an exciting one. It offers the opportunity to join and contribute to an already strong team while also being a key part of our future research vision. This will place you at the forefront of a dynamic field, supported by a team that is seeking to deliver impactful research.

You will have the opportunity to collaborate closely across campus and at IAAPS to access cutting-edge facilities, expertise, and networks. This will fuel your research endeavours and enable you to make significant contributions to the field.

In this role, you will also have the chance to build and lead your own team, shaping the direction of research and fostering a dynamic and innovative environment. The University has secured substantial funding with major grants, demonstrating a commitment to investing in cutting-edge research initiatives. This provides a firm foundation for further growth and innovation, with opportunities for impactful research spanning the hydrogen value chain.

### The candidate

- You will hold a PhD or equivalent experience in a relevant field, possess a strong background as an acknowledged authority in hydrogen research, and demonstrate a sustained publication record in leading journals.
- You will evidence an ability to secure sustained research funding, international recognition, and effective teaching achievements.
- Strong academic leadership, visionary research strategy, excellent communication, and collaborative interpersonal skills are very important attributes needed in this role.
- The faculty believes that if the culture is right then all success will follow. This commitment to excellence, inclusion and ethics is strong.

Our people are the key to our success. We are looking for you to be a culturally aware, kind leader who develops an environment where every individual is valued and respected, regardless of their background or identity. You will proactively seek out diverse perspectives, recognising the richness and creativity this brings to decision-making and problem-solving. You will remain optimistic in the face of challenges, seeing them as opportunities for growth and innovation.

You will understand that change is inevitable and necessary, actively encouraging your team to adapt and evolve. By promoting a culture of openness and inclusivity, coupled with a desire to listen as well as a readiness to embrace change, you will create a dynamic, resilient, and adaptable team.

### What we can offer you

- a very generous employer contributory pension scheme
- generous annual leave allowance with an additional 5 discretionary days so that you can enjoy a positive work-life balance
- family-friendly University with an increasingly agile workforce open to flexible working arrangements
- an excellent reward package that recognises the talents of our diverse workforce
- a wide range of personal and professional development opportunities
- several support options available for new and existing staff to help with the cost of some immigration expenses which you may be eligible for: Relocation allowance, Visa Reimbursement, and Interest-Free Loan.

### Find out more about our benefits

We consider ourselves to be an inclusive university, where difference is celebrated, respected and encouraged. We have an excellent international reputation with staff from over 60 different nations and have made a positive commitment towards gender equality and intersectionality receiving a Silver Athena SWAN award. We truly believe that diversity of experience, perspectives, and backgrounds will lead to a better environment for our employees and students, so we encourage applications from all genders, backgrounds, and communities, particularly from under-represented groups, and value the positive impact that will have on our teams.

We are very proud to be an autism-friendly university and are an accredited Disability Confident committed to building disability confidence and supporting disabled staff.

Find out from our staff what makes the University of Bath a great place to work. Follow us [@UniofBath](#) and [@UniofBathJobs](#) on X for more information.

# Application process



## How to apply

Please follow this link: [FM11457 Professor of Sustainable Hydrogen Energy](#)

## Key dates

### Closing date for applications

4th August 2024

### Key dates

Shortlisting	14th August 2024
Invitation to interview/feedback	15th August 2024
Campus Interview day 1 (Presentation + tour)	4th September 2024
Campus Interview day 2 (Interview)	5th September 2024

The interview process will span two days. On Day 1, there will be a presentation followed by a tour. Day 2 will involve one-hour interviews. Throughout this period, there will be chances for informal discussions via phone or online. Travel and accommodation expenses will be covered.

## Contact information

Please get in touch with us if you would like more information.



### Francis Ondoro

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☎ +44 1225 385662

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## What to expect

We want your experience to be as seamless as possible. Here's a quick summary of what to expect during the process.

- Initial Conversation with the Talent Acquisition Team**

Our initial conversation is a pivotal step, offering you the chance to gain insights and ask questions about the role and our culture. We encourage open dialogue to ensure a mutual understanding from the outset.
- Invitation to Submit Application**

Upon receiving your invitation to apply through our secure job portal, we welcome any inquiries you may have regarding the application process or the information required, ensuring clarity and confidence as you proceed.
- Notification of Shortlisting and Feedback**

Should your application be shortlisted, we will not only inform you promptly but also provide constructive feedback. We invite your questions at this stage to foster a transparent and informative process.
- Arrangements Confirmed for the First Interview**

Prior to your first interview, we ensure all details are confirmed and communicated, providing an opportunity for you to seek any clarifications or ask additional questions to fully prepare for our discussion.
- First Interview**

The first interview is designed as an interactive exchange, where we delve deeper into your experiences and aspirations. We encourage you to ask questions, enabling a comprehensive understanding of the opportunity.
- Final Interview**

During the final interview, we aim to solidify our mutual expectations and fit. This stage offers a further opportunity for in-depth questions, ensuring both parties are aligned in their goals and values.
- Verbal Offer**

Upon extending a verbal offer, we open the floor for any questions or discussions regarding the specifics of the offer, the role, and the next steps, ensuring you have all the information needed to make an informed decision.
- Formal/Written Offer**

With the issuance of a formal written offer, we encourage you to review and reach out with any questions or for clarifications on any aspect. Our goal is to ensure your complete understanding and comfort with the terms presented.
- Offer Accepted**

Following the acceptance of the offer, we reiterate our commitment to ongoing support and dialogue. As you transition into your new role, we are here to assist, listen, and address any questions that arise.
- Continued Support**

Our support extends beyond the recruitment process. We are dedicated to fostering an environment of open communication, offering guidance and answers to your questions as you integrate into our team and culture.