UNIVERSITY OF CAMBRIDGE

Research Associate

Department of Physics

Closing Date: 1st November 2026
Job Reference: KA51428

Race Equality Charter Bronze Award

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Athena SWAN Silver Award

Research Associate in the Photophysics of Battery Materials & Molecular Systems

Salary:
Research Associate:
£37,694 - £46,049 (Grade 7)

Research Assistant:
£34,610 (Grade 5)

Contract:
Fixed Term (36 months)

Location:
Cambridge

Faculty / Department:
Department of Physics

Responsible to:
Professor Akshay Rao

Working Pattern:
Full Time

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Purpose of the role

The role holder will join the group of Professor Akshay Rao in the Optoelectronics Group, Department of Physics (Cavendish Laboratory), to study the photophysics of battery materials and molecular systems. The research uses optical spectroscopy and optical microscopy to investigate charge and ion transport, and the structural and chemical changes that occur in these materials during operation.

The role holder will design and carry out experiments that combine optical spectroscopy and optical microscopy, develop optical instrumentation where required, analyse and interpret the resulting data, and publish and present the findings. They will be expected to take part in collaborations with other researchers and PhD students in the group, as well as with national and international partners.

The post is available from 4 January 2027, or as soon as possible thereafter, for a fixed term of 36 months.

Appointment at research associate is dependent on having a PhD including those who have submitted but not yet received their PhD (in which case appointment will initially be made at research assistant and amended to research associate when the PhD is awarded).

Key responsibilities

Research and scholarship

- develop research objectives and proposals for own or joint research;
- conduct individual and collaborative research projects;
- write up research work for presentation and publication;
- continually update knowledge and understanding in field or specialism;
- translate knowledge of advances in the subject areas into research activity;
- manage own research and administrative activities, with guidance if required;
- assist in the preparation of proposals and applications to external bodies, e.g. for funding and contractual purposes;
- communicate material of a specialist or highly technical nature.

Key responsibilities continued

Teaching and learning support

- may assist in the supervision of student projects;
- provide limited supervision/instruction to classes;
- may assist in the development of student research skills; may plan and deliver seminars relating to research area.

Liaison and networking

- liaise with colleagues and students;
- build internal and external contacts and participate in networks for the exchange of information and to form relationships for future collaboration.

Planning and organising

- plan the use of research resources, laboratories and workshops as appropriate;
- plan and manage own research activity in collaboration with others; contribute to planning of joint research projects led by principal investigator.

Person Specification

Criteria	Essential	Desirable
Education & Qualifications		
PhD (or close to obtaining) in Physics, Chemistry, Materials Science or a closely related discipline	✓	
A good first degree (2.1 or equivalent)	✓	
Specialist knowledge & skills		
Ability to pursue scientific investigation from the conception stage through to publication	✓	
Experimental experience in optical spectroscopy	✓	
Experimental experience in optical microscopy	✓	
Experience with molecular materials	✓	
Experience with battery or electrochemical materials	✓	
Interpersonal & Communication Skills		
Proven organisational, communication and team working skills.	✓	
Relevant Experience		
Experience in optical instrument development	✓	
Experience in the analysis of large datasets	✓	
Experience in collaborative research, including with external partners		✓
Additional requirements		
Demonstrate ability to write reports, present results and contribute to academic papers.	✓	
High level of accuracy and attention to detail.	✓	
Experience of managing own workload	✓	

Declaration on Research Assessment

The University of Cambridge is a signatory to the San-Francisco Declaration on Research Assessment (DORA), and in recruitment or promotion evaluations will assess research on the basis of its merits rather than the journal or venue in which it is published. Applicants should not include Journal Impact Factors or uncontextualized metrics in their applications. Full details are at: https://www.research-strategy.admin.cam.ac.uk/research-policy/DORA

Behavioural Attributes

This section summarises the behavioural attributes (or competencies) that we expect the role holder to be able to demonstrate, at what level and whether this is an essential or desirable requirement. Full definitions are at: https://www.hr.admin.cam.ac.uk/policies-procedures/behavioural-attributes

Please review these and provide specific examples in your application of how you have demonstrated these attributes in your work, education or other experience. It will assist your application if you explain the situation, what you did and what the outcomes were.

Attribute	Level
Valuing Diversity	A
Achieving Results	B
Communication	C
Innovation and Change	C
Negotiating and Influencing	C
People Development	C
Relationship Building	B
Strategic Focus	C

Professional Services Values

Developed by professional services staff, our values underpin everything we do. By living the values in the work we do, we hope to foster an environment where staff feel empowered. The values encourage staff to; work together and share skills to create a sense of community, act with integrity, take an inclusive and fair approach and develop honest and open relationships that are underpinned by our shared values. We encourage applicants to consider these values within their application.

Department of Physics – Cavendish Laboratory

The Cavendish Laboratory was founded in 1871, with the simultaneous appointment of James Clerk Maxwell as the first Cavendish Professor. It has a distinguished history of contribution to science. Thirty-three Nobel prize winners have worked for considerable periods within the laboratory, and the Cavendish is associated with many notable discoveries, including the identification of the electron and neutron, the structure of DNA, and the discovery of pulsars.

A new era is beginning for Physics at Cambridge, and our new, purpose-built facility for world leading research opened in 2025, replacing the Cavendish II buildings which dated from 1971. The new building, the Ray Dolby Centre, and our strategic plan, both represent a renaissance in the way we carry out physics research and achieve our research goals. The spirit of adventure and innovation will be fostered in the Cavendish tradition, but adapted to the new needs of frontier research.

About the Department

At the heart of the new approach is a more flexible alignment of our research activities into research themes. This change of emphasis has been inspired by a number of changes in the nature of contemporary physics research. See: https://www.phy.cam.ac.uk/research.

In addition to serving as a home for physics research at Cambridge, the new Cavendish Laboratory will be a top-class facility for the nation - much of the specialised research equipment in the new building is being made available to other institutions. The new facility has been designed to match the more exacting standards of current research, and to serve the educational needs of future generations of students much better than was possible at our previous site. Capacity for public events has also been incorporated into the design, so that our extensive programme of outreach work with schools, and with the general public, will continue to serve the local population well into the future

Key information

Currently the Department comprises about 55 academic staff, 200 postdoctoral researchers, and 300 graduate students. Together with administrative and technical support staff and academic visitors, the Department hosts around 1000 people.

Athena SWAN

The Department of Physics is very proud to be the first Physics Department in the UK to have been awarded an Athena SWAN Gold award from May 2014, having held a Silver award and also Juno Champion status since 2010. The Department is keen to promote support for staff with family commitments.

Research themes

Research activities at the Cavendish span a wide range of physics.

There are seven strategic themes: Astrophysics, High Energy Physics, Biological and Biomedical Physics, Energy Materials, Emergent Quantum Phenomena, Assembly and Function of Complex Systems, and Quantum Devices and Measurements.

The themes encompass a growing range of research groupings: Astrophysics; Atomic, Mesoscopic and Optical Physics; Biological and Soft Systems; High Energy Physics; Microelectronics; Molecular Engineering; NanoPhotonics; Optoelectronics; Quantum Matter; Quantum Sensors; Scientific Computing; Semiconductor Physics; Surfaces, Microstructure and Fracture; Theory of Condensed Matter and Thin Film Magnetism.'

Information about the current research activities in these areas is available at: www.phy.cam.ac.uk/research/

Recent developments

The Department is engaged in a number of inter- and cross-disciplinary research programmes.

In 2008 it established a new **Physics of Medicine** programme focusing on biological and biomedical applications of physics which is based in a purpose-built interdisciplinary centre on the Laboratory site. The **Battcock Centre for Experimental Astrophysics** opened in October 2013, adjacent to the **Kavli Institute for Cosmology** in Cambridge and to the main buildings of the Institute of Astronomy. This has enabled all Cambridge astronomers to be brought together in a single complex of buildings for the first time. The **Maxwell Centre**, designed to promote industrial collaboration, opened in April 2016.

The School of the Physical Sciences

The School of the Physical Sciences is one of the six Schools in the University of Cambridge and comprises the following Departments:

- **Applied Mathematics and Theoretical Physics (DAMTP)**
- **Cambridge Zero**
- **Yusuf Hamied Department of Chemistry**
- **Earth Sciences**
- **Geography (including the Scott Polar Research Institute)**
- **Institute of Astronomy**
- **Issac Newton Institute of Mathematical Sciences (INI)**
- **Materials Science and Metallurgy (MSM)**
- **Physics (Cavendish Laboratory)**
- **Pure Mathematics and Mathematical Statistics (DPMMS)**

About the School

The School's vision is to strengthen and enhance Cambridge's position as one of the leading institutions globally for the best people to pursue their careers in the Physical Sciences. The School aims to contribute to our understanding of the physical world through excellence in observational, theoretical and experimental science and to extend quantitative, qualitative and interdisciplinary methodologies to address problems across a range of fields including biology, technology, medicine, social science and the humanities.

The School is responsible for allocating core funds to departments and provides broad strategic focus in a number of areas including; research activity, human resources, infrastructure and estate needs, undergraduate and postgraduate education, IT and digital transformation and fundraising.
As part of the University's planning process, the School prepares a financial and academic plan which sets out strategic objectives, determines budgets as well as the flow of resources to departments. The School manages a wide range of administrative activities and projects across its departments and works alongside other Schools to further interdisciplinary research.

The School has almost 1,700 members of staff, over 4,000 students and an annual budget of over £200 million.

The School's departments and institutes are supported by the School Office led by the Head and the Secretary of the School. The School Office administrative team includes the Deputy and Assistant School Secretaries, the Finance Business Partnering team, the Director and Deputy Directors of Education who lead the Education team, the IT and Digital Transformation Lead, and the Research Relations Team.
The wider School team supporting our departments also includes representatives from HR, fundraising, change management and research administration.

The Office of the School currently occupies a suite of offices in 17 Mill Lane. More information about the School Office and links to the websites of the School's constituent Departments can be found at the SPS website: https://www.physsci.cam.ac.uk/

Terms of Appointment

Tenure and probation
Appointments will be made on a fixed-term basis for a period of 36 months, due to limited funding. Appointments will be subject to satisfactory completion of a six-month probationary period.

Hours of Work and Working Pattern
The hours of work for the position are full time (based on working 37 hours per week), working Monday – Friday. Your times of work will be notified to you by your line manager.

Pension
You will automatically be enrolled to become a member of USS (Universities Superannuation Scheme) – a hybrid pension scheme. For further information please visit: www.pensions.admin.cam.ac.uk/.

Annual leave
Full time employees are entitled to annual paid leave of 41 days inclusive of public holidays. For new part-time employees, annual leave will be pro rata'd based on days worked.

General information

Pre-employment checks
Right to work in the UK
We have a legal responsibility to ensure that you have the right to work in the UK before you can start working for us. If you do not have the right to work in the UK already, any offer of employment we make to you will be conditional upon you gaining it.

Health declaration Once an offer of employment has been made the successful candidate will be required to complete a work health declaration form.

Qualifications
The person specification for this position lists qualifications that are essential and/or desirable. Please note that if you are offered the post you will be asked to provide your relevant original certificates of these qualifications.

References
Offers of appointment will be subject to the receipt of satisfactory references.

Information if you have a disability
The University welcomes applications from individuals with disabilities. We are committed to ensuring fair treatment throughout the recruitment process. We will make adjustments to enable applicants to compete to the best of their ability wherever it is reasonable to do so and, if successful, to assist them during their employment. Information for disabled applicants is available at http://www.admin.cam.ac.uk/offices/hr/staff/ disabled/

We encourage you to declare any disability that you may have, and any reasonable adjustments that you may require, in the section provided for this purpose in the application form. This will enable us to accommodate your needs throughout the process as required.

However, applicants and employees may declare a disability at any time.

If you prefer to discuss any special arrangements connected with a disability, please contact hr@phy.cam.ac.uk.

The University

The University of Cambridge is consistently ranked one of the best universities in the world, achieving academic excellence through its Faculties, Departments and other Institutions, together with the 31 Colleges.

The University is renowned for its record of discovery and innovation. It is one of the great institutions, with a regional, national and global reach, attracting the very best and brightest minds. Our staff and students shape the world around us for the better: we attract and partner with like-minded people.

Whether contributing to the development of new anti-cancer drugs, adding to the understanding of how black holes are formed, revolutionising the study of ancient settlements, convening academic expertise to offer solutions to the climate crisis, or analysing public attitudes towards democracy around the world, the University's research is remarkable in its breadth, quality and impact. The University also sits at the heart of Europe's largest technology cluster and has catalysed more than 1,500 high-tech companies. And yet what inspires our 24,000 students and 13,000 staff is not what has already been achieved, but what is possible in the future.

The education and experience of our students, based on a partnership between the University's academic Departments and Faculties and the 31 Colleges, is second to none. Every student is a member of one of the Colleges, each a community of students, academics and staff drawn from across the University's comprehensive range of subject areas.

The University is a self-governing community, with a system for decision-making that provides a high degree of accountability and transparency to its members. Each Department and Faculty is part of one of six academic Schools, but each of them, and each individual academic, has a great deal of autonomy. The Colleges are independent and self-governing, working in a symbiotic relationship with the University.

The University has a number of Institutions that are independent of any Faculty or Department and are not part of the academic Schools. These include the Institute of Continuing Education (which provides high-quality education to adults throughout their lives), the Fitzwilliam Museum, Kettle's Yard (an historic house and gallery that holds important collections of modern art) and the University Library. In addition to their diverse contributions to University and public life, these non-School Institutions are also important centres of teaching and research.

Cambridge University Press & Assessment provides academic publishing, examinations and learning materials worldwide, supporting the dissemination of research, academic development at school and in higher education, and international student mobility. Legally, the Press & Assessment is a department of the University. It provides very important funds to invest in the academic purposes of the University.

The University has made truly remarkable contributions to the sum of human understanding, with breakthrough ideas and discoveries that have changed the way we understand ourselves, our planet, and the universe around us. Yet the global and national contexts in which it operates are fast-changing and increasingly filled with uncertainty. In a world that is becoming - politically, economically, socially, and technologically – ever more interconnected but even less equal, the University's mission – "to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence" – has never been more relevant.

About Us

The University is one of the world's leading academic centres. It comprises 150 faculties and departments, together with a central administration and other institutions. Our institutions, museums and collections are a world-class resource for researchers, students and members of the public representing one of the country's highest concentrations of internationally important collections.

The University has an annual income of £2 billion. Research income, won competitively from the UK Research Councils, the European Union (EU), major charities and industry, exceeds £500 million per annum and continues to grow.

The Colleges and the University remain committed to admitting the best students regardless of their background and to investing considerable resources both in widening access and financial support. The 31 Colleges are self-governing, separate legal entities which appoint their own staff. Many academic staff are invited to join a College as a Teaching Fellow, which provides a further social and intellectual dimension. The Colleges admit undergraduate students, provide student accommodation and pastoral support and deliver small group teaching for undergraduates.

The University awards degrees and its faculties and departments provide lectures and seminars for students and determine the syllabi for teaching.

Our instinct for seeking out excellence and setting up enduring and mutually beneficial collaborations has led us to establish strategic partnerships across the globe. Whether it is the successful Cambridge-Africa Programme involving universities in Ghana, Uganda and elsewhere on the African continent; or the close association with the government of India to pursue new research in crop science; or the creation, with Germany's Max Planck Institutes, of a Cambridge-based centre for the study of ethics, human economy and social change – international partnerships are now an inextricable part of the University's make-up.

"Through its outstanding education, research and innovation, the University of Cambridge has made – and continues to make – a lasting contribution to human knowledge and is flourishing. By working at the University of Cambridge, you will be joining a vibrant community of students, scholars and professional services staff committed to supporting and enhancing the University's mission to contribute to society."

Professor Deborah Prentice,

Vice Chancellor 2023

Working at the University

Working at Cambridge you will join a diverse, talented and innovative community, with more than 24,000 students and over 13,000 staff from all walks of life and corners of the world.

The University continually explores strategies to attract and retain the best people. It is committed to supporting its staff to achieve their best. We are a fair, diverse and inclusive society and we believe our staff are our greatest asset. There is strong commitment to developing institutional leadership and supporting and encouraging staff development at all levels.

The University offers a variety of roles including academic, research, professional, managerial and support roles. We also offer extensive benefits and excellent learning opportunities within a stimulating working environment.

The University's estate is undergoing the most significant transformation in its history. Cambridge has been able to create a science and technology campus to the west of the city centre, and is expanding further to the north west of Cambridge including investing in affordable homes for University key workers and community facilities. Even with their continued development, the University remains within walking or cycling distance across the campus. The University is a major partner on the Cambridge Biomedical Campus and continues to redevelop its historic city centre sites demonstrating a clear determination to ensure that we can offer the best facilities and opportunities for our staff and students.

Equality, Diversity and Inclusion

The University has built its excellence on the diversity of its staff and student community. We aim to be a leader in fostering equality and inclusion, and in promoting respect and a sense of belonging for all. We encourage applications from all sections of society. All appointments are made on the basis of merit. We have an Equal Opportunities Policy, along with a range of diversity groups, including the Women's Staff Network, Race Equality Network and LGBT+ Staff Network. More details are available here: http://www.equality.admin.cam.ac.uk/

The University has a bronze Race Equality Charter award, with a framework for improving the representation, progression and success of minority ethnic staff and students within higher education. Furthermore, the University's silver Athena swan award recognises and celebrates good practice in recruiting, retaining and promoting gender equality.

Living in Cambridge

Cambridge is rich in cultural diversity. From beautiful University and College buildings, museums and art galleries, quaint gardens and punts on the River Cam, to a vibrant restaurant and café scene, our employees are surrounded by the wonderful features of this unique city.

You can find a wide-range of high street shops and 3 shopping centres, with independent alternatives at the historic market and nestled within the passageways in the city centre. You will find a cinema, bowling alley, a nightclub and various live performances at the Cambridge Leisure Park, with further entertainment options at the Corn Exchange, Arts Theatre and the ADC Theatre. Further information can be found on the Visit Cambridge website.

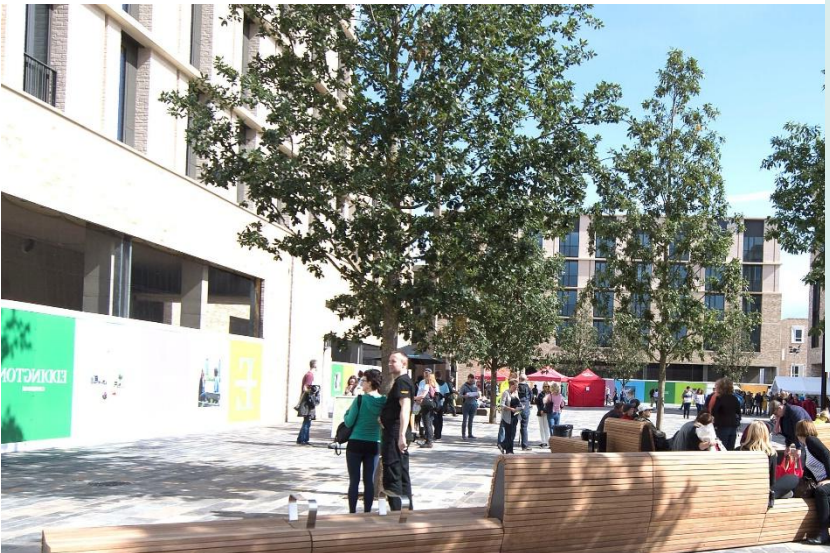
If you prefer the faster pace of life, London is a 45-minute train journey away. For those travelling from overseas, Stansted Airport is just 45 minutes away and Heathrow Airport under 2 hours away. The University is a short distance from a host of other attractions such as Ely Cathedral, Newmarket Races and various wildlife parks and stately homes. Cambridge is also within easy reach of the beautiful Broads and coastlines of Norfolk and Suffolk.

Relocation Support

The University recognises the importance of helping individuals to move and settle into a new area. We provide support and guidance to those relocating internationally or domestically to take up a post at the University of Cambridge, liaising with other University offices and selected partners to ensure comprehensive relocation support is available. This includes: accommodation, childcare, schools, banking, immigration and transport. If you would like further information, please visit https://www.accommodation.cam.ac.uk/RelocationService/. The Shared Equity Scheme and the Reimbursement of Relocation Expenses Scheme provide financial assistance to qualifying new members of

Accommodation Service

The University Accommodation Service helps staff, students and visiting scholars who are affiliated to the University in their search for suitable accommodation in Cambridge. The dedicated accommodation team can provide access to a wide range of University-owned furnished and unfurnished properties, and has a database of private sector accommodation available for short and long-term lets. For further information and to register with this free service please visit: https://www.accommodation.cam.ac.uk/



What Cambridge can offer

We offer a comprehensive reward package to attract, motivate and retain high performing staff at all levels and in all areas of work.

The University offers a wide range of competitive benefits, from family leave entitlement, to shopping and travel discount schemes. Our generous annual leave package contributes to the positive wellbeing of our University employees. Sabbatical leave enables academics to focus on research and scholarship, whilst still maintaining their full salary. The University also has a career break scheme for academic and academic-related staff, with additional flexible working policies for all other staff.

Pay and benefits

The University salary structure includes automatic service-related pay progression in many of its grades and an annual cost of living increase. In addition to this, employees are rewarded for outstanding contribution through a number of regular pay progression schemes. The University offers attractive pensions schemes for employees, with an additional benefit of a salary exchange arrangement providing tax and national insurance savings.

CAMbens employee benefits

The University offers employees a wide range of competitive benefits, known as CAMbens. CAMbens offers something for everyone across a range of categories, including:

- Financial Benefits, including shopping discounts (both local and national) and a Payroll Giving scheme;
- Relocation and Accommodation Benefits, including relocation assistance and interest-free Rental Deposit Loans;
- Travel Benefits, including Cycle to Work, discounts on train season tickets and interest-free Travel to Work loans;
- Family Friendly and Lifestyle Benefits, including support with childcare and family friendly policies;
- Health and Wellbeing Benefits, including a University Staff Counselling Service, discounts at the University Sports Centre, and other local gyms, and healthcare schemes.

What Cambridge can offer

Family-friendly policies

The University recognises the importance of supporting its staff. We have a range of family-friendly policies to aid employees' work-life balance including a generous maternity, adoption and shared parental leave entitlement of 26 weeks' full pay, and paid emergency leave for parents and carers.

Other family-friendly support includes:

Our highly regarded workplace nurseries, a childcare salary exchange scheme and a high-quality holiday Playscheme are available to help support University employees with caring responsibilities (subject to demand and qualifying criteria). Further childcare information can be found here: https://www.childcare.admin.cam.ac.uk/

The Newcomers and Visiting Scholars Group (https://www.nvs.admin.cam.ac.uk/) is an organisation within the University that welcomes the partners and families of visiting scholars and new members of the University. Run by volunteers, the group offers opportunities to visit interesting Cambridge venues, learn about the community, take part in social events and gain local knowledge while developing a strong support network of both residents and other newcomers.

Your wellbeing

The University's Sport Centre, Counselling Services and Occupational Health are just some of the support services available to University employees to promote their physical and mental wellbeing. The University delivers The Festival of Wellbeing annually, which is a programme of stimulating talks and activities, which aim to promote wellbeing and good mental and physical health. The University also hosts the Cambridge Festival, which is a great opportunity to get your first taste of public engagement, through volunteering, supporting hands-on activities or proposing a talk.

Development opportunities

We support new employees to settle in through various activities as well as supporting their professional and career development on an ongoing basis. Our Personal and Professional Development (PPD) team provide development opportunities for all University employees, including face-to-face sessions, online learning modules and webinars. All employees also have unlimited access to LinkedIn Learning to support their development. Both new and existing employees can undertake funded Apprenticeships, which lead to a range of vocational and professional qualifications. We offer reduced staff fees for University of Cambridge graduate courses and the opportunity to attend lectures and seminars held by University departments and institutions. A range of University training providers also offer specialist learning and development in their own areas e.g. teaching and learning, digital literacy, finance, health and wellbeing, safety.

How to apply

Applications should be submitted online via the University of Cambridge jobs page www.jobs.cam.ac.uk by clicking “Apply online” in the job advert. You will need an email address to register for our online system.

Conversations about flexible working are encouraged at the University of Cambridge. Please feel free to discuss flexibility prior to applying (using the contact information below) or at interview if your application is successful.

Informal enquiries are welcomed and should be directed to: Professor Akshay Rao

Email: ar525@cam.ac.uk

If you have any queries regarding the application process, please contact: hr@phy.cam.ac.uk

The closing date for applications is: 1 November 2026