

Research Associate x6

Department	Electronic and Electrical Engineering (www.strath.ac.uk/engineering/electroniclectricalengineering/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Research	Reference No	508116
Reports To	The Head of School/Department, through Professor Harald Hass	Grade:	7
Salary Range:	£34308 - £42,155	Contract Type:	Fixed Term (Until 31/03/2025)
FTE:	1 (35 hours/week)	Closing Date	Monday, 6 March 2023

Job Advert

The LiFi Research and Development Centre (LRDC) of the Electronic and Electrical Engineering Department announces six new openings of research associate (RA) funded by the Department for Digital, Culture, Media and Sport to develop a more diverse telecommunications market under the Future Open Networks Research Challenge (FONRC). The LRDC is looking for candidates with a strong proven track record in either research and/or development in one or more of the following subjects: Optical wireless communications (OWC) (preferred), optical fibre communications, satellite communication, optics, photonics and optoelectronic design, digital signal processing, artificial intelligence (AI) and machine learning (ML) for communication networks. We are seeking to recruit for the following positions, please therefore indicate which role you believe you would be most suited to in your application:

1. A **software research engineer** to develop and implement AI/ML algorithms on the novel REASON architecture and platforms
2. A **system researcher** to model novel system concepts involving optical reconfigurable intelligent surfaces (RIS) as well as LiDAR sensing co-designed with grid-of-beam vertical layer surface emitting laser (VCSEL) optical wireless transmitters.
3. A **systems research engineer** for long range and high speed free-space optical (FSO) systems building massive MIMO photovoltaic receivers for simultaneous energy harvesting and gigabit/s transceivers towards net-zero FSO systems deployable anywhere.
4. An **analogue electronics design engineer** developing ultra-high bandwidth and low power optical wireless drivers and receivers (detector arrays and transimpedance amplifiers (TIAs) for LiFi systems. Candidates with analog chip design expertise are preferred.
5. A **digital research engineer** developing ML algorithms for hybrid multi-access integration of radio frequency (RF) and optical wireless communication (OWC) systems, and implementing them on field programmable gate arrays (FPGAs) and digital signal processor (DSP) platforms.
6. An **optoelectronic research engineer** designing the segmented optics (such as new flat freeform optics) for our LiFi, multiuser system including the integration of new detectors and transmitter technologies for massive MIMO LiFi systems.

The Realising Enabling Architectures and Solutions for Open Networks (REASON) project led by the University of Bristol, was awarded almost £12M to develop and industrialise technologies and solutions for future 6G mobile networks. It brings together an ecosystem representing the entire telecommunication research and development supply chain. REASON will significantly contribute to the global 6G standardization.

The researchers will actively engage with the different project partners including University of Bristol, Kings College London, University of Southampton, Queens University of Belfast, Thales, among many others. This provides unique opportunities for collaboration and career development. The candidate will be guided to achieve project deliverables and also establish a personal

research portfolio. It is expected that the candidate engages in relevant student supervision, professional and knowledge exchange activities and administrative activities.

Research Associates will be part of the LiFi Research and Development Centre (LRDC) at the University of Strathclyde which has established an international reputation in collaboration with, and on behalf of industry, aiming to accelerate society's adoption of LiFi and emerging wireless technology through engagement with major industrial partners, to fully harness the commercial and innovative potential of LiFi.

As a Research Associate, under the general guidance of Professor Haas and Dr Tavakkolnia, you will develop research objectives and proposals, play a lead role in relation to a specific project/s or part of a broader project, conduct individual and/or collaborative research, contribute to the development of new research methods and communication system prototypes, identify sources of funding, and contribute to the securing of funds for research, including drafting grant proposals and planning for future proposals. You will write up research work for publication, individually or in collaboration with colleagues, and disseminate the results via peer reviewed journal publications and presentation at conferences. You will join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding. You will collaborate with colleagues to ensure that research advances inform departmental teaching effort and you will collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish research links with industry and influence public policy and the professions. You will supervise student projects, provide advice to students and contribute to teaching as required by, for example, running tutorials and supervising practical work. You will contribute in a developing capacity to Department/School, Faculty and/or University administrative and management functions and committees and engage in continuous professional development.

To be considered for the role, you will be educated to a minimum of PhD level in an appropriate discipline, or have significant relevant experience in addition to a relevant degree. You will have sufficient breadth or depth of knowledge in Communication Systems and a developing ability to conduct individual research work, to disseminate results and to prepare research proposals. You will have an ability to plan and organise your own workload effectively and an ability to work within a team environment. You will have excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

Whilst not essential for the role, applications are welcomed from candidates with: relevant work experience, membership of relevant Chartered/professional bodies (including the Higher Education Academy), experience of relevant student supervision and teaching activities, and/or experience of knowledge exchange related activities.

Job Description

Brief Outline of Job:

To undertake a specific research and development project/s under the general guidance of Professor Haas and Dr Tavakkolnia; to establish a personal research portfolio and plan research proposals, with assistance from senior colleagues as required; to engage where required in relevant teaching, professional and knowledge exchange activities; and input to administrative activities.

Main Activities/Responsibilities:

1.	As part of a wider research group or programme, develop research objectives and proposals for own or joint research and play a lead role in relation to a specific project/s or part of a broader project, with guidance from senior colleagues as required.
2.	Plan and manage own workload, with guidance from colleagues as required.
3.	Conduct individual and/or collaborative research, including determining appropriate research methods and contributing to the development of new research methods.
4.	Identify sources of funding and contribute to the securing of funds for research, including drafting grant proposals and planning for future proposals.
5.	Write up research work for publication, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, peer reviewed journal publications and presentation at conferences.
6.	Join external networks to share information and ideas, inform the development of research objectives and to identify potential sources of funding.
7.	Collaborate with colleagues to ensure that research advances inform departmental teaching effort.
8.	Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in initiatives which establish research links with industry and influence public policy and the professions.

9.	Supervise student projects, provide advice to students and contribute to teaching as required by, for example, running tutorials and supervising practical work.
10.	Contribute in a developing capacity to Department/School, Faculty and/or University administrative and management functions and committees.
11.	Engage in continuous professional development.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Good honours degree and PhD (or equivalent professional experience) in an appropriate discipline i.e.

D1 Membership of relevant Chartered/professional bodies (including Higher Education Academy).

Experience

E2 Sufficient breadth or depth of knowledge in the relevant discipline/s to contribute to research programmes and to the development of research activities, including a strong publication and/or prototype development track record

D2 Some relevant work experience.

D3 Experience of relevant student supervision and teaching activities.

D4 Experience of knowledge exchange related activities.

Job Related Skills and Achievements

E3 Developing ability to conduct individual research and development work, to disseminate results and to prepare research proposals.

E4 Ability to plan and organise own workload effectively.

E5 Ability to work within a team environment.

Personal Attributes

E6 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Hannah Brown, (h.brown@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

Interviews

Formal interviews for this post will be held in early March 2023.

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

