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Research Associate in RF Design and Prototyping of Reconfigurable Intelligent Surfaces

Department/Division/Faculty:	Department of Electrical and Electronic Engineering, Faculty of Engineering
Campus/Location:	South Kensington
Job Family/Level:	Research Associate* (Research salary scale)
Responsible to:	Bruno Clerckx
Line management for:	N/A
Key working Relationships (Internal):	Collaborators and team members
Key Working Relationships (External):	International collaborators and Industry partners
Contract type:	Full time, fixed term appointment till 31 March 2028.

Purpose of the Post

The post is funded by EPSRC project "Reconfigurable Intelligent Surfaces 2.0 for 6G: Beyond Diagonal Phase Shift Matrices" to conduct original research in RF design, modeling, and prototyping of reconfigurable intelligent surfaces. The successful candidate will design and prototype "beyond-diagonal reconfigurable intelligent surfaces" (BD-RIS) using reconfigurable impedance networks and/or nonlocal metasurfaces, identify the full potential benefits of BD-RIS for next generation wireless networks, and assess the feasibility of BD-RIS.

This full-time, in-person postdoctoral position is based at Imperial College's South Kensington Campus in London, UK, and is funded till 31 March 2028.

In your application, clearly explain your expertise and your approach to design and fabricate reconfigurable impedance network to enable BD-RIS.

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant.

Key Responsibilities

Main Duties:

- To take initiatives in the planning of research
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data
- To conduct data analysis
- To ensure the validity and reliability of data at all times
- To maintain accurate and complete records of all findings
- To write reports for submission to research sponsors
- To present findings to colleagues and at conferences
- To submit publications to refereed journals
- To provide guidance to staff and students
- To attend relevant workshops and conferences as necessary
- To develop contacts and research collaborations within the College and the wider community
- To promote the reputation of the Group, the Department and the College
- To provide guidance to PhD Students
- Contribute to bids for research grants
- To conduct and plan own scientific work with appropriate supervision.
- To maintain highly organised and accurate record of experimental work
- To actively participate in the research programme of the Group
- To publish in high quality journals and to present data at national and international meetings
- To participate in Group research meetings and internal seminars
- To collaborate with other allied scientists within Imperial College and elsewhere in London and abroad, as appropriate
- To contribute to the smooth running of the Group's laboratories and, facilities with other scientists, clinicians, technicians and students within the laboratories
- Assist in the supervision of undergraduate and postgraduate research students and research assistants as required
- To comply with the College, Division, and Unit safety practices and to attend courses on safety when appropriate
- Any other duties as may be deemed reasonable by Head of group as well as Head of Division/Department/Section

Other Duties:

- To undertake any necessary training and/or development.
- To undertake appropriate administration tasks.
- To attend relevant meetings.

Where Imperial or funder conditions necessitate, you will be required to complete timesheets for your work on projects in a timely manner.

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Person Specification

Requirements Candidates/post holders will be expected to demonstrate the following:	Essential (E)/ Desirable (D)
Education	
Research Associate: Hold a PhD (or be very near completion, or equivalent) in RF design, modelling, and prototyping of radio systems, reconfigurable intelligent surfaces, and/or metasurfaces, and a significant publication track record. **Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant.*	E
Experience	
Practical experience within a research environment and / or publication in relevant and refereed journals	E
Practical experience in a broad range of techniques including • Microwave circuit theory • Antenna design/measurement • RF system prototyping/experimentation • Reconfigurable RF and microwave devices and microwave networks • Reconfigurable intelligent surfaces and/or metasurfaces	E
Experience presenting and publishing scientific and/or technical research	E
Practical experience within a research environment and / or publication in relevant and refereed journals	
Knowledge of microwave circuit theory, antenna design/measurement, RF system prototyping/experimentation, reconfigurable RF and microwave devices and microwave networks, reconfigurable intelligent surfaces and/or metasurfaces	E
Knowledge of MIMO systems, wireless communications, SDR, USRP, FPGA	D
Knowledge of research methods and statistical procedures	E
Skills & Abilities	
Ability to conduct a detailed review of recent literature	E
Ability to develop and apply new concepts	E
Creative approach to problem-solving	E
Excellent verbal communication skills and the ability to deal with a wide range of people	E
Excellent written communication skills and the ability to write clearly and succinctly for publication	E

Ability to organise own work with minimal supervision	E
Ability to prioritise own work in response to deadlines	E
Advanced computer skills, including word-processing, spreadsheets and the Internet	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to undertake any necessary training for the role	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences	E
Willingness to work out of normal working hours (including weekends) if the requirements of the project demand	E

Further Information

Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Our values are at the root of everything we do and everyone in our community is expected to demonstrate Imperial:

- Respect
- Collaboration
- Excellence
- Integrity
- Innovation

Employees are also required to comply with all Imperial policies and regulations.

We are committed to equality of opportunity, to eliminating discrimination and to creating an inclusive working environment for all. We encourage candidates to apply irrespective of age, disability, marriage or civil partnership status, pregnancy or maternity, race, religion and belief, gender reassignment, sex, or sexual orientation. You can read more about our commitment on our webpages.

Imperial is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/

Imperial believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes which are ultimately aimed towards finding new treatments and making scientific and medical advances, and where there are no satisfactory or reasonably practical alternatives to their use. Imperial is committed to ensuring that, in cases where this

research is deemed essential, all animals in our care are treated with full respect, and that all staff involved with this work show due consideration at every level. Find out more about animal research at Imperial.

We recognise that excellent candidates may not meet every criterion listed. If you believe you can contribute to this role, we encourage you to apply.

Requests for flexible working, job sharing and part-time options will be considered (subject to business need).

November 2026