



Candidate Information

Position:	Research Fellow in All Spectrum Connectivity
School/Department:	School of Electronics, Electrical Engineering and Computer Science
Reference:	24/111648
Closing Date:	Monday 4 March 2024
Salary:	£37,841 per annum
Anticipated Interview Date:	Thursday 14 March 2024
Duration:	These posts are available on fixed term contracts for 3 years or until 31 March 2027, whichever comes first

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the Hub on All Spectrum Connectivity (HASC), funded by the Engineering and Physical Sciences Research Council (EPSRC). Collaborators in HASC include the University of Oxford, University of Bristol, University of Southampton, University of Strathclyde, University of Cambridge, University College London and Imperial College London.

To perform sensing measurements using equipment available within the Centre for Wireless Innovation (CWI) across frequency bands in the microwave, millimetre-wave and terahertz (THz) regions of the electromagnetic spectrum. Use the measurements to characterise and develop models for spectrum utilisation and interference. Use the results to propose co-existence and spectrum sharing strategies.

The successful candidate will become an active member of the CWI and the School of EEECS at QUB, assisting in the production of world leading research output.

MAJOR DUTIES:

1. Perform spectrum measurements at microwave, millimetre-wave and THz frequencies.
2. Characterise and develop models of spectrum utilisation including interference.
3. Explore the use of AI and machine learning in predicting spectrum utilisation.
4. Propose co-existence and spectrum sharing strategies for access technologies operating at microwave, millimetre-wave and THz frequencies.
5. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the research area.
6. Present regular progress reports on research to research group members or external audiences to disseminate and publicise research findings.
7. Prepare, often in consultation with the supervisor, material for publication in national and international journals and presentations at international conferences.
8. Assist grant holder in the preparation of funding proposals and applications to external bodies.
9. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget.
10. Carry out occasional undergraduate (final year, MEng) project supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.

ESSENTIAL CRITERIA:

1. Have, or be about to obtain, a PhD in Electronics, Electrical Engineering, or closely related discipline.
2. Research experience in wireless communications or related area.
3. Evidence of strong publication record commensurate with stage of career.

4. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
5. Strong communication skills with a demonstrable ability to communicate complex information clearly.
6. Proven ability to build contacts and participate in internal and external networks.
7. Ability to travel and present at project meetings, and international conferences.

DESIRABLE CRITERIA:

1. Able to demonstrate:
 - Experience with experimental setups for RF testing
 - Programming experience (Python and embedded software e.g. ASM, C, Arduino etc.)
 - Data processing and basic statistical analysis
 - Algorithm development
 - Knowledge of AI and machine learning.
2. Experience in:
 - EU or RCUK projects, in particular in project task management and reporting through periodic deliverables.
3. Experience in producing timely technical documentation on research projects (deliverables, reports).
4. Experience with presentations of research outputs in conferences, workshops, or seminars.