

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	School of Electronics, Electrical Engineering and Computer Science
<b>Reference:</b>	26/113240
<b>Closing Date:</b>	Monday 13 April 2026
<b>Salary:</b>	£45,349 per annum
<b>Duration:</b>	36 months

### **JOB PURPOSE:**

Conduct in-depth research in Integrated Sensing and Communication (ISAC) and multiple antenna technologies. The role includes developing advanced reconfigurable RF hardware for CAP-MIMO systems and contributing to machine learning-enhanced ISAC methods development through EM-informed modelling and hardware design.

This is a unique opportunity to build the next generation electromagnetic systems and work at one of the leading institutions in the UK in microwave and communication technology, the Centre for Wireless Innovation – Queen's University Belfast, collaborating with a team of academics and industry partners from the Republic of Ireland and USA.

### **MAJOR DUTIES:**

1. Undertake research under supervision within the specific research project(s) and, as a member of the collaborative research team, lead research within reconfigurable radio hardware, supporting CAP-MIMO validation framework, collaborating with the wider research team.
2. Execute in-depth analyses, experimental tests, critical evaluations, and implementations using field-appropriate methodologies and techniques.
3. Interpret simulation/experimental data and relevant literature to deepen understanding of information transmission/reception in spatially continuous EM fields, aligning with wider research objectives.
4. Carry out educational supervision of the PhD students under the guidance of the project investigator team.
5. In consultation with project investigators and collaborators, prepare material for publication in prestigious leading journals and presentations at major international conferences to disseminate and publicise research findings.
6. Produce high-quality research outputs consistent with project aims and commensurate with the career stage. This includes collaborating with the wider international project team (as appropriate) on outputs.
7. In consultation with the project team, promote research milestones and outputs at workshops and promotion events.
8. Assist project members in preparing funding proposals and applications to external bodies.
9. Undertake supplementary duties relevant to the success of the project at QUB, including presentation of regular progress reports and additional training and development activities as required.
10. Keep abreast of new developments in specialism and related research areas/disciplines. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

### **ESSENTIAL CRITERIA:**

1. Normally have or be about to obtain a PhD in a relevant area, such as in the field of communication technology, electrical engineering, physics, or mathematics.

2. Specific, relevant research experience, including:
  - Demonstrable knowledge of transmission line theory and electromagnetic theory and RF design, and know-how of information theory.
  - Experience with CST and/or FEKO and/or HFSS.
  - Experience in MIMO systems and models including white-noised, scalar-quantity, far-field, discretized, and monochromatic EM fields.
  - Know-how of fabrication processes of RF hardware.
  - Hands-on experience in RF measurements.
  - Strong publication record, commensurate with stage of career.
3. Ability to contribute to broader management and administrative processes.
4. Contribute to the School's outreach programme by links with industry, community groups etc.
5. Evidence of strong analytical and problem-solving skills.
6. Ability to communicate complex information effectively in oral and written format.
7. Ability to build relationships to develop internal and external networks.

**DESIRABLE CRITERIA:**

1. A PhD in the field of communication technology.
2. Hold a master's in the field of electrical engineering, physics, or mathematics.
3. Additional evidence of:
  - Knowledge of multi-antenna technology and high-frequency electronics.
  - Experience in multi-antennas system prototyping.
  - Desirable to have experience using modelling tools, such as MATLAB, Python, etc.
  - Desirable to have experience in far-field/near-field measurements.
  - Experience with CAP-MIMO hardware.
  - Experience with ISAC technologies.
4. Project management experience.
5. Experience in funding proposal writing.