



## Candidate Information

<b>Position:</b>	Research Fellow: Novel Antenna R&D Engineer
<b>School/Department:</b>	Centre for Wireless Innovation
<b>Reference:</b>	24/111652
<b>Closing Date:</b>	Monday 4 March 2024
<b>Salary:</b>	£37,841 - £40,134 per annum.
<b>Duration:</b>	Fixed term for 36 months, or available until 31 December 2027

### JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of a tri-party USA-Ireland project exploring 'Highly efficient magnetolectric nano-antennas', funded by the Department of Economy, UK, in partnership with Tyndall National Institute, Ireland and University of Utah, USA.

Lead research in the development and characterisation of novel antenna structures and new materials. Become an active member of the Centre for Wireless Innovation and the School of EEECS at QUB, assisting in the production of world leading research output.

### MAJOR DUTIES:

1. Design and optimisation of antennas.
2. 3D Full-Wave electromagnetic numerical simulation.
3. Physical measurement characterisation of antennas from UHF and above.
4. Physical measurement characterisation of antennas on and in complex media.
5. Develop bespoke antenna test-beds.
6. Development of wireless system technology demonstrators.
7. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the proposed research topic.
8. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
9. Prepare, often in consultation with the supervisor, material for publication in national and international journals and presentations at international conferences.
10. Assist grant holders in the preparation of funding proposals and applications to external bodies.
11. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget.
12. 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 the 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 EM related antennas and propagation field.
3. Experience in designing novel microwave antennas with strong focus on physical measurement characterisation.
4. Evidence of strong publication record commensurate with stage of career.
5. Demonstrable ability to:
  - contribute to research management and administrative processes.
  - contribute to the School's outreach programme by links with industry, community groups etc.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
7. Strong communication skills with a demonstrable ability to communicate complex information clearly.

8. Proven ability to build contacts and participate in internal and external networks.
9. Ability to travel UK, EU, USA and present at project meetings, and international conferences.

**DESIRABLE CRITERIA:**

1. Able to demonstrate:
  - Experience with antennas using alternative materials.
  - Design and implementation of optimum impedance feed networks for antennas.
  - Familiarity with antennas in complex media.
  - Experience in using design and simulation software, such as CST, Sim4Life.
  - Experience with wireless transceiver development.
  - RF troubleshooting for RF systems.
2. Experience 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.