

## Candidate Information

<b>Position:</b>	Research Fellow - Cell Free Massive MIMO: From theory to implementation
<b>School/Department:</b>	School of Electronics, Electrical Engineering and Computer Science
<b>Reference:</b>	24/111628
<b>Closing Date:</b>	Monday 26 February 2024
<b>Salary:</b>	£37,841 - £38,969 per annum
<b>Anticipated Interview Date:</b>	Wednesday 6 March 2024
<b>Duration:</b>	This post is available on a fixed term contract for 12 months, or available until 31/03/2025, whichever is sooner.

### JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of a major EPSRC project involving 17 UK universities and 4 industrial partners. To implement the first-ever indoor cell-free massive MIMO demonstrator using software defined radios (SDRs), and 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. Develop the first ever cell-free massive MIMO demonstration using software defined radios (SDRs) in an indoor environment.
2. Perform indoor-to-indoor measurements and indoor-to-outdoor measurements and channel modelling.
3. Compare different precoding/detection algorithms on the prototype.
4. Develop and plan an area of personal research and expertise and/or undertake research under supervision within a specific research project or as a member of a research team.
5. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the proposed research topic.
6. Present regular progress reports on research to research group members or to 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 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 massive MIMO, physical implementation of distributed networks, radio measurements and modelling or related area.
3. Evidence of strong publication record commensurate with stage of career.
4. Demonstrable ability to:
  - contribute to research management and administrative processes.
  - contribute to the School's outreach programme by links with industry, community groups etc.
5. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
6. Strong communication skills with a demonstrable ability to communicate complex information clearly.
7. Proven ability to build contacts and participate in internal and external networks.
8. Ability to travel and present at project meetings, and international conferences.

**DESIRABLE CRITERIA:**

1. Able to demonstrate:
  - Strong background in communication theory, real-time radio measurements and modelling.
  - Strong background in physical demonstration of multiple-antenna systems.
2. Experience in EU or RCUK projects, in particular in project task management and reporting through periodic deliverable.
3. Experience in producing timely technical documentation on research projects (deliverables, reports).
4. Experience with presentations of research outputs in conferences, workshops, or seminars.