

Candidate Information

Position:	Research Fellow - Design and Implementation of Wideband Antenna Arrays
School/Department:	School of Electronics, Electrical Engineering and Computer Science
Reference:	24/111576
Closing Date:	Monday 12 February 2024
Salary:	£37,841 per annum
Anticipated Interview Date:	Monday 26 February 2024
Duration:	16 months

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the research project/team assisting in the design and implementation of antenna arrays for ultrawideband (UWB) operation. This will be carried out as part of a research team, within an existing funded project, aiming to develop a UWB system which will include digital signal processing and channel modelling.

MAJOR DUTIES:

1. Develop, design, and simulate, wideband antenna arrays for ultrawideband operation at frequencies between 1-10 GHz and sub-bands within this coverage.
2. Coordinate the Fabrication of the antennas with other staff and outside organisations.
3. Interface the wideband arrays to DSP hardware developed by other staff within the project.
4. Measure the wideband arrays in an anechoic chamber environment, and also validate in open environments using ISM bands.
5. Present regular progress reports to members of the research team and the industry partners.
6. Prepare, in consultation with line manager, material for publication in prestigious leading journals and presentations at major international conferences to disseminate and publicise research findings.
7. Identify new funding opportunities and assist in the preparation of funding proposals.
8. Carry out, if required, occasional undergraduate and postgraduate supervisions, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
9. Carry out administrative tasks associated with the research project to ensure that project is completed on time and within budget, including organisation of project meetings and documentation, risk assessment of research activities, etc.
10. Keep abreast of new developments in own specialism and related research areas/disciplines.

ESSENTIAL CRITERIA:

1. Hold or be about to obtain (within six months) a PhD in a relevant subject.
2. At least a 2.1 undergraduate's degree in electrical/electronic engineering or physics.
3. Relevant design and implementation experience of RF/Microwave antennas.
4. Experience with using antenna design software such as CST, HFSS, ADS.
5. Experience in conducting measurements and characterisation of antennas using measurement equipment such as vector network analysers, spectrum analysers and anechoic chambers.
6. A publication record in line with stage of career in prestigious leading journals (e.g. IEEE TMTT) and presentations at major international conferences.
7. Demonstrable breadth and depth of knowledge in microwave circuits theory and techniques.
8. Knowledge of a range of antenna types, eg Patch, Dipole, Helix, Spiral, particularly those suited to phased array operation.
9. Ability to contribute to broader management and administrative processes.
10. Contribute to the School's outreach programme by links with industry, community groups etc.
11. Strong analytical and problem solving skills.
12. Ability to communicate complex information effectively in oral and written format.
13. Ability to build relationships to develop internal and external networks.
14. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. A master's degree in a relevant subject.
2. Experience of RF/Microwave digital signal processing and software defined radios.
3. Experience of broadband antenna arrays.
4. Experience of electronically reconfigurable antennas.
5. Component level RF/microwave design.
6. Experience in managing a research project.
7. Experience in writing a funding proposal.