Candidate Information

Position:	Research Fellow
School/Department:	Centre for Wireless Innovation
Reference:	19/107437
Closing Date:	Wednesday 22 May 2019
Salary:	£33,199 to £39,610 per annum (with potential to progress to £43,266 per annum through sustained exceptional contribution)
Duration:	36 Months

JOB PURPOSE:

Design and implementation of RF/Microwave rectifying antennas (rectennas) and transmit arrays for high efficiency, high power, microwave wireless power transfer (WPT) systems. This will be carried out as part of a research team within an exciting new EPSRC funded project aiming to develop high efficiency, high power, medium range WPT systems.

MAJOR DUTIES:

1. Develop, design, simulate, fabricate and measure RF/Microwave rectifying antenna arrays (rectennas) for high power, high efficiency operation, for WPT reception.
2. Liaise with others in the research team to carry out the design and optimisation of antenna arrays and system integration for WPT transmission.
3. As part of a research team, verify the operation of the overall WPT system by measurement.
4. Present regular progress reports to members of the research team and the industry partners.
5. 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.
6. Identify new funding opportunities and assist in the preparation of funding proposals.
7. 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.
8. 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.
9. Keep abreast of new developments in own specialism and related research areas/disciplines.

Planning and Organising:

1. Plan details of research programmes and carefully align them with the work packages carried out by the research team in order to achieve an effective and productive synergy.
2. Plan for the use of research resources, laboratories and workshops where appropriate, in order to ensure that facilities are available at required times.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan in advance to meet deadlines for internal/external progress reports, conference and journal publications.
5. Coordinate and liaise with other members of the research team over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with colleagues, students and the industry partners.
2. Establish professional and good working relationships with technical and other support staff as well as the industry partners.

3. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
4. Join external networks at national and international levels to share information and ideas.

ESSENTIAL CRITERIA:

1. Hold or be about to obtain (within six months) a PhD in Electrical/Electronic engineering (In an RF/Microwave related subject area).
2. At least a 2.1 undergraduate's degree in a relevant subject.
3. At least 3 years design and implementation experience of RF/Microwave rectifying antennas (rectennas) .
4. Experience in RF/Microwave passive antenna element/array design
5. Experience with using software such as CST, ADS, Microwave office.
6. Experience in conducting measurements and characterisation of RF/Microwave devices and circuits and antennas using measurement equipment such as vector network analysers, spectrum analysers, power meters etc
7. A publication record in line with stage of career in prestigious leading journals (e.g. IEEE TMTT) and presentations at major international conferences.
8. Sufficient breadth and depth of knowledge in microwave circuits theory and techniques.
9. Knowledge of a range of rectifying devices and technologies, eg diodes, GaN, GaAs, Si, particularly those suited to RF/Microwave high power operation.
10. Strong analytical and problem solving skills.
11. Ability and willingness to travel to attend meetings with industry partner and conferences.
12. Ability to communicate complex information clearly.
13. Ability to build contacts and participate in internal and external networks.
14. Demonstrable intellectual ability.
15. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. A PhD in a wireless power transfer related subject.
2. Hold a master's degree in electrical/electronic engineering or physics.
3. Experience of designing lightweight structures for RF/Microwave rectifying antennas (rectennas).
4. Experience of sparse/thinned antenna arrays.
5. Performed work relevant to near field focusing properties of large phased arrays.
6. Experience of Class E/F RF/Microwave rectifier design.
7. Component level RF/microwave and IF analogue circuit design
8. Experience in managing a research project.
9. Experience in writing a funding proposal.