

Candidate Information

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| Position: | Research Fellow |
| School/Department: | Centre for Wireless Innovation |
| Reference: | 18/107021 |
| Closing Date: | Monday 7 January 2019 |
| Salary: | £33,199 - £39,610 per annum (potential to progress to £43,266 per annum through sustained exceptional contribution) |
| Anticipated Interview Date: | Tuesday 29 January 2019 |
| Duration: | 36 months or until 31 March 2022 |

JOB PURPOSE:

Design and implementation of a large phased array transmitter 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 a high efficiency, high power, medium range WPT system.

MAJOR DUTIES:

1. Develop, design, simulate, fabricate a WPT transmitter phased array system, to include beam steering capability, for high power, medium range, microwave WPT systems.
2. Liaise with others in the research team to determine the optimum specification of other components of the WPT system.
3. As part of a research team, verify the operation of the overall WPT system by measurement.
4. Present regular progress reports on research to members of the research group and the industry partner.
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 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 routine 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 any students 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 a relevant subject.
2. At least a 2.1 undergraduate's degree in electrical/electronic engineering, physics.
3. At least 3 years relevant research experience to include:
 - design and implementation of RF/microwave Receivers/Transmitters using Commercial off the shelf (COTS) devices such as Mixers, LNA's, Filters, PA's, phase locked loops, duplexers.
 - experience of microcontrollers in relation to control of RF/microwave Receivers/Transmitters
4. Familiarity with design and implementation of large antenna phased array systems
5. Familiarity with passive RF/Microwave antenna design
6. Experience with using software such as ADS, Microwave office, CST, FEKO, Matlab.
7. Experience in conducting measurements and characterisations of RF/Microwave devices and circuits using measurement equipment such as vector network analysers, spectrum analysers, power meters, digital storage oscilloscopes etc.
8. A publication record in line with stage of career in prestigious leading journals (e.g. IEEE TMTT) and presentations at major international conferences.
9. Sufficient breadth and depth of knowledge in microwave circuits theory and techniques
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 or phased array related subject.
2. Hold a master's degree in a relevant subject.
3. Experience of sparse/thinned antenna arrays
4. Experience of discrete component level RF/microwave and IF analogue circuit design
5. Experience of high Efficiency RF/microwave power amplifier (PA) design
6. Experience of Beam forming network/ power splitter design
7. Experience of design of phase tracking PLL's
8. Software defined radio experience
9. Have designed circuits using DAC's and ADC's in relation to RF transceiver design
10. Experience of writing control software to control measurement instrumentation or phased arrays
11. Experience in managing a research project.
12. Experience in writing a funding proposal.