Candidate Information

Position:	Research Fellow - Electrothermal Anti-Icing/De-Icing
School/Department:	School of Mechanical and Aerospace Engineering
Reference:	19/107923
Closing Date:	Monday 18 November 2019
Salary:	33,797 per annum
Anticipated Interview Date:	Thursday 28 November 2019
Duration:	12 months

JOB PURPOSE:

The Advanced Composites Research Group (ACRG) in the School of Mechanical and Aerospace Engineering at Queen's University Belfast, has developed a concept for a solid-state electrothermal anti-icing/de-icing device utilising ultra-thin carbon nanotube webs. The aim of this one-year fellowship is to further develop this technology and, in parallel, pursue a commercialisation strategy with the aim of bringing this device closer to market. This project should particularly appeal to an individual who has recently completed a PhD and who possesses an entrepreneurial outlook and is seeking a new challenge in applying leading-edge science and engineering knowledge for the development of new products.

MAJOR DUTIES:

1. Further develop and optimise the device and design a feasible anti-icing/de-icing system around it.
2. Evaluate the device's energy efficiency and compare with competing systems.
3. Prepare two demonstrator models for engine nacelle heating, one based on an aluminium nacelle and another on a composite nacelle.
4. Visit potential customers and demonstrate/describe the technology.
5. Work with the Supervisor/Principal Investigator (PI) and appointed Commercialisation Mentor to fulfil an agreed commercialisation plan.
6. Develop, update and maintain publicity material as required.

Planning and Organising:

1. Develop a planned programme of work which fulfils the tasks and deliverables of the project.
2. Plan own day-to day activities within the agreed framework.
3. Plan high quality presentations to promote the technology.
4. Coordinate and liaise with other members of the Advanced Composites Research Group as appropriate.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff, within the research group, and any PhD/MSc/UG students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with the PI, colleagues, students and commercial partners.
2. Visit potential customers.
3. Present technology at Engineering Exhibitions.

ESSENTIAL CRITERIA:

1. A PhD in either Aerospace / Mechanical / Materials / Mechatronics / Electrical/Electronic Engineering with a predominantly experimental research component.
2. A 2:1 or higher honours degree in one of these fields of study or a closely related field.

3. 3 years relevant research experience.
4. A knowledge of structural fibre/resin composite materials and experience in basic composite manufacturing.
5. A basic knowledge of electrical systems.
6. Experience in material characterisation and structural testing.
7. Evidence of analytical modelling.
8. Ability to plan and manage a research project.
9. Excellent communication and presentation skills both orally and in writing with the ability to relate to others at all levels both internally and externally.
10. Excellent interpersonal skills with the confidence to present at Company Executive Boards.
11. Ability to build contacts and participate in internal and external networks.
12. Demonstrable intellectual ability.
13. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. A PhD in an area which closely matches the technology under development.
2. A qualification in business studies.
3. Utilisation of Carbon nanotubes or Graphene in nanocomposites.
4. Scientific understanding of adhesive bonding.
5. Experience in in the development of scientific devices.
6. Experience of working with industry on research programmes.