



Candidate Information

Position:	Research Fellow - MEMS Resonators
School/Department:	School Office (Elect, Elect Eng & Comp Sci)
Reference:	23/111012
Closing Date:	Monday 19 June 2023
Salary:	£36,333 per annum.
Anticipated Interview Date:	Tuesday 4 July 2023
Duration:	Fixed-term, to end no later than 31 December 2023

JOB PURPOSE:

To fabricate and test high quality factor MEMS oscillators for high temperature applications. This research funded by the Engineering and Physical Sciences Research Council (EPSRC) under "New Horizon" research scheme aims to develop a new oscillator-based sensor chip capable of operating at high temperature. This is a unique opportunity to build the next generation MEMS sensors and work at one of the leading institutions in the United Kingdom, Queen's University Belfast. The successful candidate will work at Queen's Advanced MicroEngineering Centre (QAMEC) within the School of Electronics, Electrical Engineering and Computer Science (EEECS), contributing to world leading research outputs and completely new research initiatives in the broader area of MEMS sensors.

MAJOR DUTIES:

1. Fabricate MEMS oscillator chips at state-of-the-art micro fabrication facility (QAMEC).
2. Evaluate the performance of the proposed chips using existing measurement system.
3. Upgrade oscillator measurement setup to conduct long term oscillator stability measurements.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate research findings.
5. Prepare in collaboration with the supervisor the material for high-quality publications in national and international journals and presentations at international conferences.
6. Carry out routine administrative tasks associated with the research project/s to ensure that the project is completed on time and within budget. These might include the organising of the project meetings and documentation, risk assessment of research activities.
7. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the guidance of a member of academic staff.
8. Submit research grants with lead supervisor to different funding agencies.

ESSENTIAL CRITERIA:

1. Hold, or about to obtain, a PhD in Engineering or Physics.
2. Have 3 years' relevant research experience with a demonstrable background in semi-conductor process fabrication and sensor/device testing.
3. Expertise in the use of two-dimensional materials (e.g., graphene).
4. Experimental experience of sensor/device characterization and testing.
5. Publications in high impact journal and conferences.
6. Demonstrable ability to:
 - Contribute to broader management and administrative processes.
 - Contribute to the School's outreach programme by links with industry community groups etc.
7. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
8. Good communication skills, report writing skills and experience of delivering presentations.
9. Ability to build contacts and participate in internal and external networks.

10. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. One or more of the following:
 1. Practical experience in implementation and testing of MEMS oscillators.
 2. Demonstrable experience and knowledge in modelling of oscillators.
 3. Have a strong track record of publication in the proceedings of international conferences and journals (e.g IEEE, RSC, ACS) commensurate with experience.
 4. Demonstrable experience in meeting deadlines in producing technical documents.
 5. Demonstrable experience in presenting at conferences, workshops, seminars, tutorials etc.