



Candidate Information

Position:	Research Assistant
School/Department:	School of Mechanical and Aerospace Engineering
Reference:	23/110871
Closing Date:	Monday 22 May 2023
Salary:	£30,619 per annum
Anticipated Interview Date:	Monday 22 May 2023
Duration:	Fixed Term for 36 months

JOB PURPOSE:

The purpose of this job is to collaborate with the University of St Andrew's to create computational models and experimental methods for the development of polymer catheters. The goal of the project is to design Metal Organic Framework (MOF) loaded catheters that can adjust the release rate of Nitric Oxide (NO) for various medical applications.

Successful applicants will have responsibilities in independent research, supervision, planning, collaborations and outreach.

MAJOR DUTIES:

1. To assist in the development of multiphase continuum finite element models to predict water diffusion and NO release for a range of polymer materials loaded with MOFs.
2. Build experimental rig for measuring the diffusion and permeation properties of a range of polymers for water and NO.
3. Develop optimisation algorithms through surrogate modelling for determining optimum MOF loading, tube dimensions for a given polymer, and application.
4. Produce high quality research outputs in oral and written format.
5. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
6. In consultation with the project team, promote research milestones and outputs at national and international conferences.
7. Assist grant holder in the preparation of funding proposals and applications to external bodies.
8. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
9. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Have or about to obtain a 1st class honours degree in an engineering related subject.
2. At least 1 years' relevant experience to include.
 - Finite Element Analysis
 - Design and build physical prototypes.
3. Ability to contribute to broader management and administrative processes.
4. Contribute to the School's outreach programme by links with industry, community groups etc.
5. Willingness to undertake additional training in research methods and other related skills as required.
6. Practical problem-solving skills, independence of thought and initiative.
7. Ability to communicate complex information effectively in oral and written format.
8. Ability to build relationships to develop internal and external networks.
9. Ability to assess and organise resources.
10. Willingness to travel to meet the requirements of the research project.

DESIRABLE CRITERIA:

1. Demonstrable knowledge of polymers.
2. Experience in programming and instrumentation.
3. Willingness to enrol on a PhD.