

Candidate Information

Position:	Research Fellow - Re-Imagining Engineering Design (RIED)
School/Department:	Mechanical & Manufacturing Engineering
Reference:	21/109286
Closing Date:	Friday 12 November 2021
Salary:	£34,304 per annum
Anticipated Interview Date:	Week commencing 29 November 2021
Duration:	Available until 30 April 2026

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the EPSRC funded research project: Re-Imagining Engineering Design: Growing Radical Cyber-Physical-Socio Phenotypes (RIED)

(<https://gow.epsrc.ukri.org/NGBOViewGrant.aspx?GrantRef=EP/V007335/1>). The RIED Programme Grant is led by the Queen's University of Belfast in partnership with Loughborough University, University of York, Airbus, Rolls-Royce, Bombardier, Denroy Plastics Ltd, Far-UK Ltd, Glen Dimplex Group, ITI International TechneGroup Ltd, JW Kane Precision Engineering, OxMet Technologies and The Manufacturing Technology Centre Ltd.

The Research Fellow will join this vibrant network of collaborators assisting in the development of research proposals and the planning and delivery of the research activity specifically to investigate novel models and processes for integration of manufacturing and design.

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, planning, outreach and collaboration both internally and externally.

MAJOR DUTIES:

1. Undertake research under supervision within the specific research project and as a member of the collaborative research team on design and manufacturing systems to understand and devise new approaches that integrate manufacturing systems with design systems. In particular to explore bio-inspired approaches to product development.
2. Design, develop and refine research using a range of experimental models. Specifically, to develop algorithms and software tools to implement biological development analogies within an artificial evolutionary environment.
3. Carry out analyses, experimental tests, critical evaluation and implementation, and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research across a range of platforms and facilities of the wider RIED partnership.
4. 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.
5. In consultation with the project team, promote research milestones and outputs at national and international conferences and through social media (where applicable).
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. 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.
8. Undertake supplementary duties relevant to the success of the project including administrative duties, presentation of regular progress reports and additional training and development activities as required.

Planning and Organising:

1. Plan own day-to day activity within framework of the agreed research programme.
2. Contribute to the planning of research project, reports and publications etc.
3. Assist PI and project team in organising and running relevant events (if applicable).

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance, as required to any students who may be assisting with the research and to support staff, to ensure a safe working environment.

Internal and External Relationships:

1. Liaise on a regular basis with members of the project team.
2. Liaise on a regular basis with project partners and engage with industrial partners to include short term placements at partner sites across the UK.
3. Build contacts with relevant stakeholders to form relationships for future collaboration and project dissemination.

ESSENTIAL CRITERIA:

1. 2.1 Honours Degree (or equivalent) in Aerospace, Mechanical, Manufacturing Engineering or closely related discipline.
2. Normally have or be about to obtain a PhD in Mechanical, Aerospace or Manufacturing Engineering.
3. At least 3 years relevant research experience to include:
 - Undertaking research in the area of design and manufacturing, or relevant industrial experience, including demonstrable experience in manufacturing systems.
 - Experience in software development.
 - A proven track record of using experimental models to carry out analyses, critical evaluations, and interpretations of experimental data as relevant to the research project.
 - Working effectively as part of a research team in the development and promotion of the research theme.
4. Strong publication record, commensurate with stage of career.
5. Ability to contribute to broader management and administrative processes.
6. Contribute to the School's outreach programme by links with industry, community groups etc.
7. Solid breadth of knowledge of general design methods and engineering systems.
8. Practical problem solving skills, independence of thought and initiative.
9. Ability to assess and organise resources.
10. Ability to communicate complex information in English effectively in oral and written format to technical and non-technical audiences.
11. Ability to build relationships with a wide range of people and roles at different levels of seniority and to influence decision making.
12. Ability to manage self and prioritise workload.
13. A pro-active approach to work and team development.
14. Commitment to continuous professional development.
15. Ability to meet the mobility requirements of the post including the travel to project partners as required by the role.

DESIRABLE CRITERIA:

1. Experience in CAD systems, in particular scripting and automation within CAD systems.
2. Experience in the python programming language.
3. Experience in the programming and use of pythonOCC, Caclulix or similar systems.