

Candidate Information

Position:	Research Fellow - Integration of Design and Manufacturing Systems
School/Department:	Mechanical & Manufacturing Engineering
Reference:	21/108737
Closing Date:	Monday 26 April 2021
Salary:	£33,797 to £38,017 per annum
Anticipated Interview Date:	Thursday 13 or Friday 14 May 2021
Duration:	5 years or until 30 April 2026 (whichever is soonest)

JOB PURPOSE:

To investigate novel models and processes for integration of manufacturing and design as part of the RIED Programme Grant which 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 RIED Programme Grant is supported by the Engineering and Physical Sciences Research Council (EPSRC).

MAJOR DUTIES:

1. To carry out research on design and manufacturing systems to understand and devise new approaches that integrate manufacturing systems with design systems.
2. To develop software tools to enable communication between manufacturing cells (e.g. 3D printers, CNC) and CAD design models and to support decision making in the design systems.
3. Carry out analyses and experimental tests to enable critical evaluation and implementation across a range of platforms and facilities of the wider RIED partnership.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
5. Prepare, in consultation with supervisors, material for publication in international journals, and attend and present at international conferences.
6. Engage with industrial partners to include short term placements at partner sites across the UK.
7. Assist grant holder in the preparation of funding proposals and applications to external bodies.
8. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
9. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
10. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Plan for specific aspects of the research programmes. Timescales range from 1-6 months in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
5. Coordinate and liaise with other members of the research group 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 who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with colleagues and students.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
3. Join external networks to share information and ideas.
4. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. 2.1 Honours Degree in Aerospace, Mechanical, Manufacturing Engineering or closely related discipline.
2. Have or about to obtain a PhD in Mechanical, Aerospace or Manufacturing Engineering.
3. At least 3 years relevant research experience in design and manufacturing, or relevant industrial experience, including demonstrable experience in manufacturing systems.
4. Ability to contribute to broader management and administrative processes.
5. Solid breadth of knowledge of general design methods and engineering systems.
6. Demonstrated confidence in delivering complex information and presenting to technical and non-technical audiences.
7. Ability to build and maintain effective working relationships with a wide range of people and roles at different levels of seniority and to influence decision making.
8. Ability to manage self and prioritise workload.
9. A pro-active approach to work and team development.
10. Ability to meet the mobility requirements of the post.

DESIRABLE CRITERIA:

1. Experience in CAD systems, in particular scripting and automation within CAD systems.
2. Experience in 3D printing and control of printers from remote workstations.