Candidate Information

Position:	Engineering Design Research Fellows
School/Department:	School of Mechanical and Aerospace Engineering
Reference:	25/113062
Closing Date:	Monday 19 January 2026
Salary:	£41,519 - £49,536 per annum
Anticipated Interview Date:	Thursday 29 January 2026
Duration:	2 years and 8 months

JOB PURPOSE:

To be a highly productive and ambitious researcher and an integral member of the Queen's University Belfast and Rolls-Royce collaborative research team, developing and deploying novel digital design methods and tools to support the structural design of next-generation aircraft propulsion systems.

The successful applicant will have responsibilities in independent research, collaborating within the university, with partner universities, and the Rolls-Royce teams. Direct collaboration with Rolls-Royce will be a key aspect of the role, including regular visits to the company's state of the art facilities in the UK.

MAJOR DUTIES:

1. Undertake research into novel digital design tools, including geometry modelling, finite element simulation, optimisation.
2. Explore the opportunities for AI to enhance the digital design process.
3. Carry out analyses, critical evaluations, and interpretations of design methods and systems, and simulation data and literature using methodologies and other techniques appropriate for engineering research.
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.
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 and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Hold at least a 2:1 honours degree in Mechanical, Aerospace, Automotive engineering or closely related discipline.
2. Have, or be about to obtain, a relevant PhD in Mechanical, Aerospace, Automotive engineering or closely related discipline. (Candidates about to receive their PhD should articulate the plan for PhD completion within 6 months).
3. Demonstrable experience in the advanced use of Digital Design tools including CAD, Finite Element modelling and/or optimisation.
4. Demonstrable experience in extending or enhancing the capability of digital design tools.
5. Experience in algorithm development and/or workflow automation for digital design processes.
6. A proven track record of using relevant techniques to carry out analyses, critical evaluations, and interpretations of data as relevant to the research project.
7. Working effectively as part of a research team in the development and promotion of the research theme.
8. Experience of contributing to broader management and administrative processes.

9. Evidence of:
    - A sufficient breadth of knowledge of general design methods and manufacturing systems.
    - Ability to work in a team.
    - Willingness to undertake additional training in research methods and other related skills as required.
    - Practical problem-solving skills, independence of thought and initiative.
10. Proven ability to communicate complex information effectively in oral and written format.
11. Proven ability to build relationships to develop internal and external networks.
12. Ability to assess and organise resources.
13. Excellent interpersonal skills.
14. Willing to travel to partner facilities on a regular and frequent basis.
15. Willing to undergo security vetting and training to enable effective operation and compliance with research standards.

DESIRABLE CRITERIA:

1. Demonstrable experience in:
    - Experience in the use of AI to support the engineering design process.
    - Experience in the development of generative design systems.
    - Working with industry (or in industry) on research programmes.
    - Demonstrable experience in programming/scripting, beyond that taught in undergraduate engineering courses.
2. A track record of high-quality publications appropriate to stage in career.

ADDITIONAL INFORMATION:

Informal enquiries may be directed to Declan Nolan at d.nolan@qub.ac.uk.