

Candidate Information

Position:	Research Fellow - Socio Cyber Physical Systems
School/Department:	Mechanical & Manufacturing Engineering
Reference:	22/110077
Closing Date:	Monday 29 August 2022
Salary:	£35,333 per annum
Anticipated Interview Date:	Week Commencing Monday 12 September 2022
Duration:	Fixed Term 36 months

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, Spirit, Denroy Plastics Ltd, Far-UK Ltd, Glen Dimplex Group, ITI International TechneGroup Ltd, JW Kane Precision Engineering, Alloyed OxMet Technologies and The Manufacturing Technology Centre Ltd.

The Research Fellow will join this vibrant network of collaborators assisting in the planning and delivery of the research activity specifically to investigate novel models and processes for next generation manufacturing enterprises built upon a socio-cyber-physical-system (SCPS), in which design, manufacturing, and human factors are well integrated and supported by the service-oriented architecture and smart hybrid human-machine decision makings.

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 contribute to carry out research on socio and CPS systems to understand and devise new approaches in service-oriented architecture, human-machine/robot interaction/collective decision making, cloud manufacturing, supply chain, business process mapping/modelling, uncertainties, etc.
2. To identify suitable SCPS software platform and develop software tools to capture human factors and enable collective human-machine decision making at various stages across the product life cycle, such as early stage of design and manufacturing.
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.

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, Manufacturing Engineering, Mechatronics/Robotics or closely related discipline.
3. At least 3 years relevant research experience in digital manufacturing, or human machine/robot interaction, 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 manufacturing methods and 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 including the travel to project partners as required by the role.

DESIRABLE CRITERIA:

1. Experience in human machine/robot interaction or collaboration, or human factors in manufacturing context.
2. Experience in digital manufacturing systems.
3. Experience on service-oriented architecture, cloud manufacturing, system level performance measure, or integration of design and manufacturing.