Candidate Information

Position:	Senior Engineer - Manufacturing Systems
School/Department:	BRCD AMIC
Reference:	25/112606
Closing Date:	Monday 30 June 2025
Salary:	£39,922 - £47,631 per annum
Anticipated Interview Date:	Wednesday 2 July 2025
Duration:	3 years

JOB PURPOSE:

We are seeking engineers who want to innovate and apply their knowledge to the challenges of industry and society to support Digital Engineering within AMIC's advanced manufacturing activities. You will apply your specialist knowledge and experience of methods and processes, to generate innovative research outputs which have a direct economic and technical benefit to companies and sectors. You will work collaboratively with your team, industry, technology providers, national technology centres and academia to deliver key projects focused on advanced manufacturing.

AMIC - a £100M investment through the Belfast Region City Deal - is a collaborative, innovative powerhouse of advanced manufacturing set to elevate our region globally.

We are supporting economic growth and prosperity for Northern Ireland by creating high quality jobs and increasing inward investment through high value manufacturing innovation clusters.

We are driving industrial transformation, paving the way for future technologies and competing globally with a more sustainable focus.

When you join our team, you will have access to the latest advanced industrial technologies, and have the opportunity to grow and develop as an engineer and technology leader. Our mission is to provide you with the environment to innovate and create impact.

Our team of experienced staff has core capabilities in digitalising manufacturing, smart design, sustainable polymers & composites and nanotechnologies & photonics.

We're excited to be expanding the team throughout 2025.

MAJOR DUTIES:

1. Industrial Research & Development: Conduct high-quality research, development, and knowledge transfer within smart factory technologies.
2. Technical Innovation: Apply expertise in support of the development of innovative, industry-focused solutions.
3. Industry Engagement: Collaborate with industrial partners to facilitate the transfer of AMIC capabilities into commercial production and R&D teams.
4. Manufacturing Systems Development & Systems Integration: Assist in designing, implementing, and optimising MES and ERP functionality to improve efficiency and data flow in manufacturing environments.
5. Workflow Automation: Develop logic-driven workflows for event-based process automation, improving responsiveness and reducing manual intervention.
6. User Interface & Dashboards: Assist in designing and optimising UI/UX for MES and ERP applications to ensure usability.
7. Security & Compliance: Implement access control, user roles, and cybersecurity best practices to protect critical manufacturing data and maintain industry standards.

8. Multidisciplinary Collaboration: Engage constructively in cross-functional research activities, including staff training and development.
9. Global Reputation & Outreach: Enhance the international reputation of AMIC and QUB by delivering presentations, attending trade shows, and engaging with major companies and research centres worldwide.
10. Technical Documentation: Produce high-quality technical reports and demonstrations to support funding opportunities and future program activities.
11. Additional Duties: Undertake any other responsibilities reasonably requested by management.

ESSENTIAL CRITERIA:

1. Undergraduate degree in Computer Science, Software Engineering, Engineering, Science, or a related discipline; OR extensive recent and relevant industrial experience directly related to the role.
2. MES & ERP Systems Development – Understanding of manufacturing execution systems (MES) and enterprise resource planning (ERP), with experience in customisation and integration.
3. Industrial Software Integration – Proficiency in API-based connectivity, enabling smooth communication between MES, ERP, SCADA, and other automation platforms.
4. Industrial Protocols & Communication – Familiarity of protocols such as OPC-UA, MQTT, Modbus, Profibus for secure industrial data exchange.
5. Security & Access Control – Proven ability to implement role-based authentication, cybersecurity best practices, and compliance with industrial data governance frameworks.
6. Automation & Workflow Optimisation – Understanding of event-driven architectures, scripting capability such as Python or JavaScript, and business logic for process optimisation.
7. Manufacturing Process Knowledge – Strong understanding of production workflows, including OEE (Overall Equipment Effectiveness), scheduling, and traceability.
8. Demonstrable evidence of working within multifaceted environments delivering to deadlines and within budget.
9. Experience of using research/industrial tools and techniques resulting in high quality projects and technical reports.
10. Evidence of complex problem-solving skills obtained with a proven ability to develop innovative solutions.
11. Excellent written and verbal communication skills, including ability to communicate complex technical information.

DESIRABLE CRITERIA:

1. Postgraduate qualification in a relevant discipline (e.g., Data Science, Computer Science, Engineering, or Manufacturing Technology).
2. Experience working with international OEMs (Original Equipment Manufacturers) and SMEs (Small and Medium Enterprises) on data-driven solutions and digital transformation initiatives.
3. Recent relevant experience in a manufacturing environment, including:
   • Data acquisition and contextualization from multiple sources such as IoT devices, control systems, and enterprise applications.
   • Application development for industrial automation, data management, or process optimization.
4. Containerisation/Orchestration - Familiarity of containerisation technologies such as Docker and orchestration tools like Kubernetes.
5. xperience implementing structured change control processes to manage system modifications, ensure compliance, mitigate risks, and maintain stability across deployments.