Knowledge Transfer Associate – Mechatronics & Systems Integration Engineer			
Faculty / Department:	Computing, Engineering and the Built Environment	**Grade:**	*SPOT: £38,000 – £40,000*
New appointees to Birmingham City University will ordinarily be appointed at the entry point of the appropriate grade			
Responsible to:	Academic Lead	**Responsible for:**	N/A

Job Purpose

This position forms part of the Knowledge Transfer Partnership (KTP) programme co-funded by Innovate UK. The KTP Associate will work on a 28-month collaborative innovation project to develop an advanced, modular, and automated Class 1 laser marking and vision inspection system (NTQ system) for Neuteq Europe Limited, to be used for enhancing operational efficiency, product scalability, and market competitiveness.

The project

The project is focused on developing a modular and scalable Class 1 laser marking and vision inspection system (NTQ) that integrates automation, control software, and Industry 4.0 principles. It will deliver a new product range with dual functionality in traceability (laser marking) and quality control (camera vision system), targeting high-volume manufacturing environments. The project will embed capabilities in modular mechanical design, embedded software for automation, DfMA, and process simulation. The Associate will lead the design, development, and prototyping of the NTQ system; based on numerical analysis. DfMA principles, and pilot manufacturing trials, while ensuring regulatory compliance with UKCA/CE marking. The resulting system will provide flexible, interchangeable automation solutions, improve production efficiency, and accelerate Neuteq's new product introduction strategy.

Main Activities and Responsibilities

The successful candidate will lead the development of the NTQ system. The position is for 28 months. The expected start date is as soon as is practical.

The Associate will work on:

1. Developing a modular and interchangeable automated Class 1 laser marking and vision inspection system (NTQ system)
2. Conducting comprehensive evaluations of Neuteq's current product range, manufacturing processes, and identifying technological and operational gaps
3. Designing and integrating advanced automation solutions including robotic arms, automated loading/unloading platforms, sensors (e.g., proximity, temperature), actuators (linear, rotary), PLC systems (ABB, Allen Bradley, Siemens), and real-time data analytics
4. Performing numerical and process simulations to verify structural, thermal, and aesthetic requirements
5. Prototyping and validating the developed NTQ system to ensure compliance with regulatory standards (UKCA/CE marking)
6. Optimising manufacturing workflows and production layouts, addressing throughput bottlenecks and operational efficiency using simulation packages (e.g., Witness Horizon, Tecnomatix Plant Simulation, Simul8)

7. Managing the commercialisation and market launch of the new NTQ system, including intellectual property management, development of user manuals, and marketing materials

The role requires the successful candidate to develop:

8. A robust and flexible modular system architecture suitable for high-volume precision manufacturing, incorporating advanced mechanical design and automation features
9. Standalone software interface ensuring seamless hardware/software integration aligned with Industry 4.0 principles
10. Numerical and process simulation models to identify optimal mesh sizes, structural integrity, thermal management, and efficient production flow
11. Detailed documentation required for regulatory compliance (UKCA/CE marking)
12. Effective knowledge embedding strategies, including training for Neuteq personnel and development of standard operating procedures
13. Comprehensive commercialisation and product launch strategies

The Associate will be expected to interact with the senior management, suppliers and clients of the company as well as BCU academics.

The Associate must also be adept at applying their knowledge to commercial projects, driving value and making an impact where possible, with an ability to solve problems and create innovative solutions.

Person Specification

Essential Criteria	Application Form / Support Statement / Interview
1. A minimum 2:1 undergraduate qualification in Manufacturing Engineering, Mechanical Engineering, Product Design, Robotics and Automation Engineering, Mechatronics Engineering, or a closely related discipline	Application Form / Interview
2. Excellent communication skills to express ideas effectively, orally, graphically and in writing to articulate complicated matters between the academics and the company project team members	Application Form / Interview
3. An ability to work to tight deadlines with diligence, attention to detail, and maintain high standards of work	Application Form / Interview
4. An ability and aptitude to work effectively as part of an interdisciplinary team; and self-management and planning skills to make optimum use of time	Application Form / Interview
5. Strong leadership skills in successfully implementing and embedding new innovations within a company or organisation	Application Form / Interview
6. Experience or knowledge of automation systems integration including PLC systems (ABB, Allen Bradley, Siemens), robotic arms, sensor integration, and real-time analytics.	Application Form / Interview

7. Experience or knowledge of process simulation tools (e.g., Witness Horizon, Tecnomatix Plant Simulation, Simul8)	Application Form / Interview
8. Familiarity with Design for Manufacturability and Assembly (DfMA) principles	Application Form / Interview
9. Familiarity with mechanical design, CAD software (e.g., SolidWorks), numerical analysis (FEA), and meshing techniques	Application Form / Interview
Desirable Criteria	
10. MSc/PhD in a related subject or relevant experience	Application Form / Interview
11. Practical experience with UKCA/CE regulatory compliance processes	Application Form / Interview
12. Background in modular systems development and Industry 4.0 methodologies (real-time systems, interoperability, agile development)	Application Form / Interview
13. Prior experience with new product development methods (stage-gate process, agile development, concurrent engineering)	Application Form / Interview
14. Previous experience in manufacturing, specifically relating to high-quality precision solutions	Application Form / Interview
15. Academic acumen to enable successful reporting through research publications in academic journals and marketing/training materials	Application Form / Interview
16. A clean driving license and a willingness to travel to utility contracts throughout the UK	Application Form / Interview
17. Practical experience of working in the manufacturing industry	Application Form / Interview

- Application Form – assessed against the application form. Normally used to evaluate factual evidence e.g. award of a qualification. Will be assessed as part of the shortlisting process.
- Cover Letter & CV - applicants are asked to provide a statement to demonstrate how they meet the criteria, and may reference their CV. The response will be assessed as part of the shortlisting process.
- Interview – assessed during the interview process by either competency-based interview questions, tests, work-related exercise, presentation and discussion, or teaching session etc.