

Job Description

Date Job Description created: February 2019

Job Title: Mechatronics Development Engineer – KTP Associate	Job Holder:
Department: School of Computing, Engineering and Physical Sciences in partnership with Helia Photonics Ltd	Location: Helia Photonics- Unit 2 Rosebank Technology Park, Livingston EH54 7EJ UWS - Paisley Campus

Reporting To:

The KTP Associate will work under the direction of the Knowledge Base Supervisor at UWS – Dr Luc Rolland, Lecturer and the Company supervisor, Dr Antoine Boudet, Process Engineer, and Company CEO, Dr. Caspar Clark.

Dimensions:

This project is a collaboration between Dr Luc Rolland of UWS and Dr Antoine Boudet, Process Engineer, and Company CEO, Dr Caspar Clark.

The aim of the project is to help Helia Photonics to design and develop a complete robotics workcell applied to micro-manipulation of semiconductor chips and laser bars at the company's facility located in Livingston near Edinburgh (Scotland, United Kingdom). The Associate will design, prototype, test, and qualify all components of the platform which will be rolled out for industrial production within Helia at the end of the project. This includes the development of a versatile gripper, a high-performance robotic manipulator and the associated sensory system to achieve feedback-based reliable micron-level positioning in 3D space.

You will be fully supported by the company's senior management and multidisciplinary team of engineers, and by a team of academics at UWS. As project lead you will gain experience and develop novel and unprecedented commercially valuable skills and deliver real business impact.

We wish to recruit a graduate with a minimum of a MSc or higher preferably in Robotics or Mechatronics; an MSc (research) in Mechanical or Electrical Engineering with speciality in Control, Industrial Vision or Automation or related discipline will also be encouraged

The Associate should also possess excellent communication, presentation and interpersonal skills, and be able to work independently and as part of a high-performance team.

The KTP Associate will be based at Helia Photonics Ltd. and UWS, Paisley under the supervision of UWS and Helia Photonics Ltd. supervision team. The Associate will have opportunity to work on this leading project, conduct a variety of research, have various publications, presentations opportunities as well as gain possibility of progressing into a full commercial project

Key Result Areas:

Milestones throughout project include :

- Analysis of target market and development of business case
- Design of a robotic manipulator and gripper to meet project-defined KPIs

- Construction, testing, optimisation and integration of the robotic manipulator and gripper within tabletop workcell
- Development of quality control system, programming of robotic manipulator and vision-based automation
- Final certification of system to KPIs for manipulating customer product within cleanroom environment at Helia Photonics
- Academic publications

Planning and Organising:

The KTP Associate will work under the direction of the Knowledge Base Supervisor (Dr Luc Rolland), and Dr Antoine Boudet, Process Engineer. The post holder will be responsible for completing their tasks in a timely manner and will be responsible for reporting and presenting progress reports to the company supervisor and director on a weekly basis. Specific presentations to the wider Helia Photonics Ltd. staff may be scheduled as needed especially during the design phase.

In the course of the project, the KTP associate will produce interim reports and presentations to the management team as defined within the KTP project work plan.

Decision Making

- Be proactive and contribute to decisions regarding the viability of various business/technical solutions to support the project deliverables.
- Identify solutions that are appropriate to the project deliverables.

Framework and Boundaries

- Authority to plan, organise and progress their own work to realise project objectives and targets.
- Act in an advisory capacity on technology opportunities for the organisation

Working Relationships:

The Associate will be required to regularly liaise with key representatives from the University and Helia Photonics as required. The KTP associate will have regular interactions with engineers, technicians and business managers as required. The associate will have very regular interactions with the company supervisor regarding all aspects of the project. He/she will interact as needed with the mechanical engineers regarding aspects of the robot/gripper design and construction, and with the specialised process engineers and technicians regarding semiconductor manipulation and integration of the workcell within Helia's cleanroom environment.

Person Specification

Department: School of Computing, Engineering and Physical Sciences in partnership with Helia Photonics Ltd	Job Title: Design and Development Engineer – KTP Associate
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Education/Qualifications/Training: Essential: <ul style="list-style-type: none">• MSc Robotics, Mechatronics, Mechanical or Electrical Engineering with Control or Automation or related discipline• Or equivalent research and development experience.
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Experience: Essential: <ul style="list-style-type: none">• Experienced in mechatronics design and construction, robotic control and programming for trajectory planning and precision manipulation, vision control and automation, prototyping and experimental testing & refinement.• Project management experience ideally within industrial environment. Desirable: <ul style="list-style-type: none">• Knowledge and experience of micro-engineering• Experience with semiconductor / microchips handling within a cleanroom environment would be a plus.
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Skills/Knowledge/Understanding:

Essential :

- Solid knowledge of robot design & control system design;
- Knowledge in vision based sensor systems;
- Experience in at least one high-level computer programming language such as Visual Basic (preferred) or C/C++
- Ideally, track record of programming in Maple
- Strong experimental background
- Excellent technical writing, preparation, and reporting

Desirable :

Knowledge:

- Mechatronics and micro-controllers
- Micro-engineering
- Knowledge and experience in prehensile technology for micro-sized components would be a plus

Skills:

- Electronics
- Data collection and analysis
- Computer programming, Python, Visual Basic, Matlab, LabView

Experience:

- Working with semiconductor components and/or within cleanroom environments.

Understanding:

- Business drivers and how to construct business cases for new technology/process adoption

Personal Attributes:

- Motivated and enthusiastic
- Enthusiasm to learn and explore new technical opportunities
- Ability to integrate within a high-performance, multidisciplinary team
- Strong work ethic
- “Hands-on” approach to problem solving