

Job Description

Job Description for the post of: **Quantum Specialist KTP Associate**

Department:	Department of Physical Sciences
Section/Unit/School:	School of Mathematics and Physical Sciences
Location:	CPI TMD Technologies Ltd, Unit 3 Swallowfield Way, Hayes, Middlesex, UB3 1DQ
Grade:	8 + London Weighting A salary of £55-58k (including London Weighting) is commensurate with the level at which CPI TMD employs Senior Engineers.
Responsible to:	Professor Matthias Keller
Responsible for:	n/a

Job Description

CPI TMD Technologies Ltd and the University of Sussex are looking to recruit a highly motivated and skilled researcher within the area of spectroscopy, quantum optics and atom-light interaction to lead and deliver a project to commercialise an optical atomic clock.

CPI TMD Technologies Ltd's core business is the design, manufacture, supply and repair of high-power microwave amplifiers and power supplies to the defence and communications industries. These products are typically high value and low-to-medium volume, requiring extremely specialist manufacturing and testing capability to realize. In order to achieve more significant growth, the company is pursuing development of a third revenue stream from quantum-enabled sensing and timing products.

This position forms part of the Knowledge Transfer Partnership (KTP) programme co-funded by a grant through Innovate UK. It is essential that the post holder understands that a KTP works across the business and the university, and the vital role you will play if you successfully secure this position. KTPs offer a wide range of benefits including access to management training, mentoring and a £6,000 Personal Development budget to enable you to upskill during the project. Find out more about [KTPs](#).

Working with experts from the university and drawing on expertise from within the company, you will follow CPI-TMD Technologies Ltd's New Product Introduction process (a gate stage engineering lifecycle) to translate the current system design from a research system to a commercial product.

Accountabilities

1. To lead on and deliver successful project outcomes in collaboration with the University of Sussex and CPI TMD Technologies Ltd throughout the whole product lifecycle

2. To provide regular reports and presentations to CPI TMD Technologies Ltd and University of Sussex management team members updating them on project progress. Write / contribute to publications
3. To evaluate and review technologies used and recommend changes to the project plan, as necessary, determined by research findings

Responsibilities

1. Project management

- 1.1. To lead on and deliver agreed project outcomes
- 1.2. To provide regular project updates and recommendations to senior company and university members of Knowledge Transfer Partnership at regular monthly meetings
- 1.3. To provide written reports on project progress and technology developments
- 1.4. Resolve issues / problems within the project as they arise, identifying solutions and consulting with supervisors

2. Research and development

- 2.1. To lead on the development of the products throughout the whole product lifecycle engaging with marketing, comms and manufacturing teams as and when necessary
- 2.2. Develop research objectives and proposals with senior CPI TMD Technologies Ltd and university colleagues
- 2.3. Conduct research individually and in collaboration with others
- 2.4. Analyse and interpret research findings and draw conclusions on the outcomes
- 2.5. Participate in internal networks and relevant external networks in order to share learning with peers and project board members
- 2.6. Continually update your own knowledge and understanding in the field and engage in continuous professional development opportunities offered by CPI TMD Technologies Ltd, through activities offered by University of Sussex Quantum Centre and through the KTP programme

3. Collaborative working with KTP partners

- 3.1. Attend and deliver presentations on project progress at regular KTP meetings
- 3.2. Liaise regularly with senior management team members across multiple sites and will be expected to attend conferences to network with businesses to update knowledge and skills
- 3.3. Understand how the KTP process works to support Business and University partners and lead on outputs

4. Decision Making and Problem Solving

The role holder will be project lead, managing your own workload and ensuring outputs are delivered on time. This will require:

- Using your creative thinking and decision-making skills to explore all possible technical solutions and determine changes to those used, adjusting, developing and reporting on the project plan accordingly.
- Directing problem-solving activities and your own learning with the support of in-company and university supervisors.

- Recommending and agreeing project changes with the Local Management Committee (LMC) members according to research findings.
- Advising company employees on any changes or impacts to manufacturing processes that may be required as a result of developing the new products during the project

Major Deliverables

- To deliver project outputs as determined by the agreed KTP project plan
- To report on project progress and recommend changes in response to research findings
- To bring products to market in liaison with CPI TMD Technologies Ltd sales and marketing team and with the support of company and university supervisors

In order to do this, you will

- Engage with the KTP process to support and deliver outcomes for both the university and business partner
- Work collaboratively with all KTP partners, particularly the university and teams across CPI TMD Technologies Ltd, to achieve successful project outcomes.
- Act as a proactive conduit for knowledge exchange sharing learning and research findings by:
 - Providing expert support to colleagues within the company.
 - Sharing knowledge and learning with academics and students at research group meetings
 - Participating in agreed networks
 - Supporting a better understanding of the technologies amongst appropriate networks
- Liaise and clearly communicate with a range of different stakeholders at different levels of seniority and with different degrees of technical knowledge. This will include:
 - Leading on the presentation of project updates to the company director and senior academics on a regular basis at Local Management Committee meetings.
 - Translating research findings and product capabilities to non-technical company employees in the sales and marketing team as part of the product handover and launch
 - Contributing to required KTP reporting requirements
 - Writing / contributing to academic publications

5. Person Specification

ESSENTIAL CRITERIA

1. Qualified to PhD level in quantum optics or quantum technology with atomic systems and, ideally, atomic clocks
2. A solid understanding of atom-light interaction, quantum optics and spectroscopy
3. Practical and theoretical familiarity with the operating principles of atomic clocks
4. Experience of working with vacuum systems
5. Reliable with proven project management experience

6. Excellent problem-solving skills
7. Ability to work individually on own initiative and as a team player
8. Ability to appreciate colleagues' points of view, ask for help and offer help to others where appropriate
9. Experience in expressing and explaining technical ideas both verbally and in written format at a technical level appropriate to the audience. This included providing reports, written processes, delivering effective presentations and authoring publications
10. Experience with CAD software
11. MS Office, especially Excel and PowerPoint

DESIRABLE CRITERIA

1. Knowledge of, and experience in electronic engineering
2. System engineering skills
3. Experience in optical atomic clocks
4. Familiarity with ion traps
5. Understanding and experience of working with high precision spectroscopy and diode lasers
6. Awareness of general developments in quantum optics technology
7. Experience of cooperative working environments