

Role: Scientist - Material Formulation & Testing

Reports to: Principal Scientist - Head of Inorganic Materials, Formulation & Testing

Location: Cambridge, UK

## Role Summary

Cambridge Photon Technology (CPT) is a spin-out company from the University of Cambridge developing a breakthrough technology to break the efficiency ceiling of conventional silicon solar panels. Our Singlet Fission-based Photon Multiplication (PM) technology offers a "frictionless" path to super-efficient solar power, integrating into existing module manufacturing lines to elevate silicon PV efficiencies beyond 30%.

We are entering a critical phase of intensive, product-focused development and are expanding our technical team to execute an aggressive technical roadmap. We are seeking a Scientist to be a key hands-on contributor in **Material Formulation & Testing**.

This is a hands-on laboratory role. The successful candidate will report to the Principal Scientist and will be a key hands-on contributor to the formulation and testing team. You will be responsible for combining our novel organic and inorganic materials, preparing high-quality samples, and performing the advanced photophysical characterisation required to drive system-level performance.

## Key Responsibilities

The position is a hands-on role focused on system-level experimentation and advanced characterisation:

- **System Formulation:** Execute hands-on experiments for the PM system formulation. Systematically prepare multi-component (organic and inorganic) material combinations.
- **Advanced Characterisation:** Perform advanced photophysical characterisation of materials and complete systems, with a strong focus on **steady-state and time-resolved optical spectroscopy** (e.g., absolute PLQE, UV-Vis, transient absorption/PL).
- **Data Analysis:** Analyse spectroscopic data to build a deep understanding of system performance, energy transfer dynamics, and loss pathways.
- **Performance Optimisation:** Contribute to the optimisation of the complete system to meet ambitious roadmap KPIs for quantum efficiency and stability.
- **Cross-Functional Collaboration:** Work in close, daily collaboration with the **Organic Materials Synthesis** and **Inorganic Materials Synthesis** teams. Provide them with high-quality performance data and feedback to guide their synthetic efforts.
- **Reporting:** Meticulously document all experimental work. Contribute data, analysis, and summaries for technical reports and team meetings.
- **Lab Management & Safety:** Contribute to the safe and efficient operation of the spectroscopy and formulation labs, including adherence to all health and safety practices (especially laser safety).

## Role Requirements

With a PhD in Chemistry, Physics, Materials Science, or Chemical Engineering, you will be a creative and driven scientist with a strong experimental background in photophysics and materials characterisation.

### Essential Experience & Skills:

- **Strong hands-on experience** in **steady-state and time-resolved optical spectroscopy** (e.g., absolute PLQE, transient absorption/PL) and sample formulation.
- **Proven ability** to work independently on complex experiments, analyse data, and present results clearly.
- **Good theoretical and practical understanding** of organic and nanocrystal photophysics, surface chemistry, and energy transfer mechanisms (e.g., FRET, triplet transfer).
- **Strong understanding** of structure-property relationships in photoactive materials.
- **Experience** in **air-sensitive sample preparation** and characterisation (e.g., glovebox).
- A "hands-on" mentality and a proactive, problem-solving attitude.
- Excellent organisational and communication skills.
- Strong record-keeping and a diligent attitude toward health and safety.

### Advantageous Experience:

- Direct experience with **NIR-emitting materials** or systems.
- Familiarity with **singlet fission** systems and triplet exciton dynamics.
- Knowledge of **sample encapsulation techniques** for stability and device testing.
- Scripting (e.g., Python, Matlab) for data analysis and equipment automation.
- Experience in fabricating and testing simple optoelectronic devices.

## What We Offer

- A key hands-on role in a high-impact company with the potential for truly global environmental and commercial impact.
- The opportunity to grow with an organisation as its technology goals are achieved.
- A competitive salary and benefits package, commensurate with experience.
- A full-time role (37.5 hour week) based in Cambridge, UK, with 25 days holiday allowance.

Interested parties should send a CV and covering letter to [careers@cambridgephoton.com](mailto:careers@cambridgephoton.com)