CAMBRIDGE PHOTON TECHNOLOGY

Role: Scientist - Organic Materials Synthesis
Reports to: Principal Scientist - Organic Materials Synthesis
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 Senior Scientist in Organic Materials Synthesis to be a vital member of the team, supporting the hands-on synthesis and optimization of the core organic molecules that make our technology possible.

This is a hands-on laboratory role. The successful candidate will report to the Principal Scientist and will be an essential hands-on contributor to the organic materials team. You will be responsible for supporting the execution of novel material synthesis, contributing to reaction pathway optimization, and helping the team meet key performance milestones.

Key Responsibilities

The position is a hands-on role focused on synthetic execution and experimental support:

- **Project Execution & Synthesis:** Design and execute multi-step synthetic routes for novel singlet fission donor molecules and energy-transfer ligands.
- **Material Optimisation:** Contribute to the optimization of synthetic routes, reaction conditions, and purification methods to improve yield and purity.
- **Contribute to Roadmap Goals:** Work closely with the team to support R&D, ensuring your experimental work helps meet the ambitious quarterly milestones for material performance and stability.
- **Scale-Up & Purification:** Execute purification techniques (e.g., sublimation, chromatography, recrystallisation) to deliver high-purity materials. Support the development of scalable synthetic routes.
- **Cross-Functional Collaboration:** Work in close collaboration with the "Inorganic Materials" team and the "Formulation & Testing" team to provide materials for validation in the complete Photon Multiplication system.
- **IP Generation & Reporting:** Meticulously document all experimental work in lab notebooks. Contribute data and summaries for technical reports and presentations.
- **Lab Management & Safety:** Adhere to and promote safe lab practices. Contribute to the efficient operation of the lab, including equipment maintenance and chemical inventory management.

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Role Requirements

With a PhD in Organic Chemistry, Polymer Chemistry, or Materials Science, you will be a creative and driven scientist with a passion for hands-on lab work.

Essential Experience & Skills:

- **Strong background** in multi-step organic synthesis, purification, and characterisation (e.g., NMR, UV-Vis, PL, XRD, Mass Spec).
- **Demonstrated experience** in the synthesis of conjugated small molecules or polymers for optoelectronic or related material applications.
- **Proven ability** to execute synthetic chemistry projects as part of a team.
- **Strong understanding** of structure-property relationships in photoactive organic materials.
- Expertise in **air-sensitive synthesis techniques** (e.g., Schlenk line, glovebox).
- A "hands-on" mentality, with the ability to identify and solve synthetic challenges.
- Excellent organisational, communication, and interpersonal skills, with the ability to work effectively in a fast-paced, collaborative start-up environment.
- Strong record-keeping and a diligent attitude toward health and safety.

Advantageous Experience:

- Experience in synthesising organic ligands for nanocrystal functionalisation.
- Good theoretical and practical understanding of singlet fission and the photophysics of triplet excited states.
- Knowledge of material stability assessment and synthetic approaches for improving operational lifetime.
- Familiarity with the characterisation of exciton dynamics (e.g., transient absorption/PL spectroscopy).
- Experience in scaling up synthetic routes from lab to batch production.

What We Offer

- A key 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