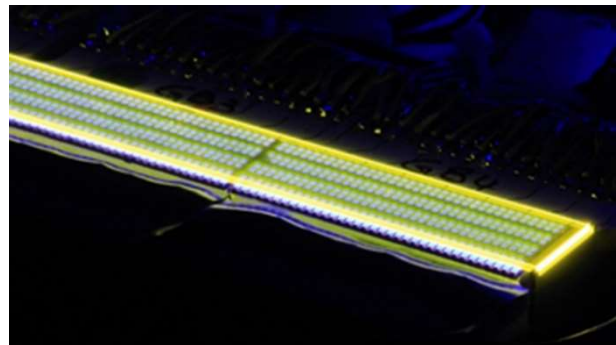


1-year post-doctoral / research engineer contract Development of materials for optical applications Laser Physics Laboratory, Université Sorbonne Paris Nord

The Organic Photonics and Lasers team at LPL is recruiting an R&D project manager for a one-year fixed-term contract, as part of the ANR project "NewLight" led by F. Balembos (Laboratoire Charles Fabry de l'Institut d'Optique Graduate School). This ANR project involves 4 physics (LCF, LPL) and chemistry (ICR, Chimie Paris) laboratories.

The NewLight project aims to develop new light sources based on luminescent concentrators. A luminescent concentrator (LC) pumped by LED is a parallelepiped-shaped luminescent material whose large faces are covered with LEDs. After absorbing the LED light, the material re-emits light in the LC that is guided to its edges, achieving concentration through total internal reflection, and resulting in a luminance 10 to 20 times higher than that of the LEDs. This is an emerging field with a high potential for breakthroughs and numerous potential applications.

The material chosen so far is a rare-earth-doped crystal (typically Ce: YAG). Another promising approach is to use a transparent polymer matrix (PMMA) doped with organic dye molecules. The Organic Photonics team at LPL is responsible for this study in the ANR project, and it is in this context that the R&D engineer will be recruited.



The recruited person will be responsible for material development and project management, with a high level of autonomy. As a polymerist integrated into a physics laboratory, she or he will be responsible for the different stages of the project:

- Defining the most appropriate polymer (PMMA or otherwise) and strategy for the preparation of highly transparent parallelepiped pieces with the dimensions desired by the end user
- Defining and purchasing the equipment necessary for device fabrication
- Self-training (as necessary) with chemist collaborators (already identified) on the implementation of the process
- Recruiting and managing (if necessary) a support internship for experiments
- Writing the "materials" part of the publications and reports.

It should be noted that, although LPL does not have polymer chemistry expertise, it has an optics workshop for polishing pieces and of course tools for optical characterization of the concentrators once they have been made. Further characterizations can also be performed at the Institut d'Optique, where the final source integrating the concentrator will be produced. The person recruited can learn the optical characterization techniques during the contract and no particular competence in this area is required

Profile and required main skills:

- Holder of a PhD or engineering degree with project management experience
- High level of autonomy and ability to manage multiple collaborations
- In-depth knowledge of polymer chemistry and associated
- Strong interest in experimental work
- Open-mindedness and love of interdisciplinary work (optics, instrumentation, characterization)

Duration: 1 year**Salary: €2,500 to €3,500 gross, depending on experience****Context :**

The Laboratory of Laser Physics (UMR 7538 CNRS - Université Sorbonne Paris Nord) consists of approximately 85 members (40 researchers and teacher-researchers, 15 administrative staff and technicians, 30 doctoral students and post-doctoral researchers). It carries out its activities in the field of experimental physics with a focus on atomic and molecular physics, optics, lasers, nanosciences, materials, media and biological molecules. It is composed of eight research teams that study the interactions between waves and matter in both fundamental (atomic and molecular physics, spectroscopy, etc.) and more applied (organic lasers, biomedical optics, etc.) and often interdisciplinary areas at the interface with solid-state physics, chemistry, biology, or nanosciences. These studies range from isolated atoms to living matter, through simple or biological molecules, aggregates, and materials.