

Post-doctoral researcher in chemical and photophysical synthesis W/M

The university of Bordeaux is a great dynamic and responsible university that cares about the well-being of its staff. Joining us means working in a privileged environment within a particularly diverse and open professional community, benefiting from welcome and inclusion schemes, training and internal mobility. It means participating in an academic, scientific and human adventure. It means committing to meeting the challenges of the 21st century.

Join the Institute of Molecular Sciences ([ISM](#))!

The Institute of Molecular Sciences was created on 1 January 2007. It comprises 130 permanent staff and nearly 150 doctoral and post-doctoral students divided into 10 research groups, with scientific skills: theoretical chemistry and modeling, organic synthesis, spectroscopy, analytical chemistry, molecular recognition, environmental chemistry.

As part of the LUMA [SunRISE](#) priority research program and equipment, we are recruiting a **Postdoctoral researcher W/M in organic chemistry, synthesis, and hybrid photoactive systems**.

This project focuses on Surpassing intrinsic shortcomings of excited states to improve the efficiency and spatial resolution of photoinduced processes.

The aim of the SUNRISE project is to exploit plasmonic interactions for:

- Improve the efficiency of photochemical transformations at the nanoscale, such as photopolymerizations
- Exceed the light diffraction limit to improve photolithography resolution
- Flexibly fabricate large nanostructured surfaces to integrate them into innovative photochemical reactors and microfluidic devices.

Main activities:

Your mission will be to develop photoactive and hybrid systems based on organic dyes grafted onto gold nanoparticles. You will be responsible for the synthesis of molecular compounds and the preparation of hybrid materials, as well as their characterization. Their photophysical and photochemical properties will be investigated using optical spectroscopy techniques. The position includes interactions with consortium partners and participation in scientific dissemination activities.

Synthesis and Characterization of Photoactive Compounds

- Design and synthesis of molecules intended for TTA processes, with or without functionalization for grafting onto gold nanoparticles
- Purification and isolation of the synthesized compounds
- Structural characterization of the molecules using standard organic chemistry techniques: NMR, mass spectrometry, etc.

Preparation and Investigation of Hybrid Systems

Functionalization/grafting onto gold nanoparticles

Characterization of hybrid nanomaterials: electron microscopy, DLS, SAXS, etc.

Photophysical and Photochemical Studies

- Steady-state optical spectroscopy measurements (UV–vis absorption and fluorescence).
- Investigation of the TTA mechanism using time-resolved spectroscopy techniques: fluorescence and nanosecond transient absorption spectroscopy
- Evaluation of radical polymerization initiation processes

Project Monitoring, Communication, and Scientific Outreach

- Interactions with consortium partners: presentations at monthly meetings, etc.
- Writing reports and scientific articles, and preparing presentations
- Participation in the organization of events related to the PEPR LUMA Sunrise project: summer schools, etc.

Your skills:

Holder of a PhD in Chemistry, organic chemistry, physical chemistry, or a related discipline, you have experience in multi-step organic synthesis and photophysics.

- Ability to interact effectively with academic partners and participate in scientific discussions
- Ability to contribute to the supervision of students within the project
- Autonomy in conducting research projects, experimental rigor, analytical and synthetic thinking
- Strong communication skills and ability to work in an international collaborative environment (English proficiency required)
- Good organizational skills to manage a project across two sites, ensuring follow-up and progress through regular reporting
- Experience required in structural characterization (NMR) and in UV–vis and fluorescence spectroscopy techniques
- Knowledge of nanomaterials and/or time-resolved spectroscopy is not required but would be an asset
- Standard molecular synthesis and characterization software: ChemDraw, MestReNova/TopSpin or equivalent
- Scientific data analysis tools (Origin, Python or equivalent) are a plus

Do you recognize yourself? Apply!

More information:

By joining this position, you'll work for a national initiative bringing together seven major players in French public research. You'll be under the supervision of Dr. Dario Bassani (ISM) and integrated into the NEO group at ISM. The project will involve close interactions with Dr. Anh-Thy Bui (ENS Lyon), providing the opportunity to work within a collaborative network at the interface of photochemistry, photophysics, and functional materials.

Based in Talence, Gironde - FRANCE – access by tramway line B (stop « Peixotto ») buses, bike. The laboratory is near the city-centre of Bordeaux and about 60 Km of the Atlantic coasts. Regular travel between Bordeaux and Lyon will be required.

NB: the position is based in a laboratory in the Restrictive Zone, which requires an investigation prior to hiring, which can take up to 8 weeks.

PEPR: This position is located in an area covered by the protection of scientific and technical potential (PPST) and therefore requires, in accordance with the regulations, that your arrival be authorised by the competent authority of the Ministry.

18-month fixed-term contract

Gross monthly salary: from 2750 € to 3090 € according to the grid

What we offer:

A training course adapted to support your job taking-up and your professional development

Up to 50 days of annual leave from the first year (in proportion to the arrival date)

Participation in complementary social protection and access to social action mechanisms

75% coverage of the public transport subscription in Gironde

Sustainable mobility package for home trips–work

Access to a staff parking

Leisure, sport and culture offers for all staff

Recruitment process: Applications are reviewed as they arrive.

Candidates selected for an interview will be contacted by the Recruitment Officer for a first pre-qualification phone conversation. An interview with the supervisor will then be organised by videoconference.

Interested applicants should send a CV, brief statement of qualifications and basis for interest in the position, a list of your relevant **publications, and the email addresses of 2 appropriate references.**

Link to job offer: <https://www.u-bordeaux.fr/universite/travailler-a-l-universite/offres-emploi/post-doctoral-researcher-chemical-and-photophysical-synthesis-wm>

Please note that to be admissible, you must apply to the job offer or send e-mail with your documents at: job-ref-n5cx7q1pj5@emploi.beetween.com