Position advertisement:

Post-doc position (M/F) at the Chemistry Laboratory (UMR 5182), ENS-Lyon

Fixed-term contract	Position: **Post-doc researcher**	Training required: **PhD in Physical-Chemistry or in Applied Optics**
Contract period: 12 months	**Salary :** **According to experience, based on the salary scheme of University of Lyon [1]**	**Start date : flexible, preferably 01/09/2021**

DESCRIPTION OF THE POSITION

A postdoctoral position is available in the Chemistry Laboratory of ENS-Lyon in the Photonics and Biophotonics Team in the framework of the OPTO-PYRO project supported by the labex iMUST.

The ambition of the OPTO-PYRO project is to push forward the frontier of both energetic materials chemistry and multiphoton absorption (MPA)-based applications involving two renowned laboratories (LC ENSL and LHCEP) of complementary expertize. The LC ENSL has strong experience in molecular engineering and nanotechnology for applications in photonics, as well as in nonlinear and time-resolved spectroscopy. LHCEP (Hydrazine, and polynitrogen energetic compounds) laboratory is expert in the chemistry of energetic materials, boron and radical chemistry.

More specifically, the scope of the project is to introduce a new approach based on multiphoton absorption to trigger explosions of secondary explosives from afar. We will develop and study explosive formulations combining strong multiphoton absorption and low or no resonant linear absorption in the visible spectral range.

Work organization: full time

Workplace: Laboratoire de Chimie, ENS-Lyon, campus Monod, 46, allée d'Italie, 69364 LYON CEDEX 07, France

[1] *Exclusivement pour les contractuels*

Main goal:

Hired applicant will have to develop this new nonlinear photoactivation method of energetic materials, and investigate the underlying photoactivation and electron transfer mechanisms and photoreactions using time-resolved micro-spectroscopy in collaboration with synthetic and physical-chemists. The candidate will be involved in the photophysical and photochemical studies aiming to characterize the interaction between multiphoton absorbing dyes and energetic materials in liquid and solid phase. He/she will be in charge of the implementation of a time-resolved experimental apparatus coupled to a femto/picosecond laser and the investigation of energetic materials activated by multiphoton absorption.
In all cases, the work will be carried out on sub-critical quantities or in an inerted phase, so as not to trigger a detonation. The candidate will nevertheless be trained in the handling of energetic derivatives according to the work safety study validated by the authorities.

REQUIRED PROFILE

Skills:

The ideal candidate for this position must have a doctorate in physical-chemistry or physics.

Expertize:

Steady-state and time-resolved spectroscopy; Photochemistry; Optical microscopy; Experience in developing spectroscopic instruments and / or in non-linear optics is a plus.

Soft-management skills:

Ability to work alone or in a team; critical and analytical mind, scientific rigor, good communication skills

APPLICATIONS

Information on the post: Akos BANYASZ

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Application submission:

Applications should be submitted by e-mail to akos.banyasz@ens-lyon.fr with a motivation letter, CV and references.