

RESEARCHER – CEA\IRAMIS\LIDYL - ORME DES MERISIERS M/F

Directorate

The Directorate for Fundamental Research (DRF), implemented on all civilian centers of the CEA, has as its main objective to undertake fundamental research in relation to the missions of the CEA in the fields of physics, chemistry and life sciences, in which its excellence is internationally recognized.

Organizational unit

The Interactions, Dynamics and Lasers Laboratory (LIDYL), which is part of the CEA's Institut Rayonnement Matière de Saclay (IRAMIS) and hosts the EMR9000 CNRS-CEA, carries out fundamental research on laser-matter interaction in ultra-short pulse duration and Ultra-High Intensity (UHI) regimes. LIDYL operates the cutting-edge ATTOLab-Orme (dedicated to ultrafast dynamics studies in the gas and solid phases at the femtosecond and attosecond time scales) and UHI100 (devoted to relativistic optics, radiation generation and particle acceleration studies) facilities. LIDYL is also host laboratory for the transnational access activity of the European networks LaserLab-Europe and ARIES. LIDYL's DICO Group studies ultra-short physical and chemical processes in the condensed phase (liquid and solid) and their applications on topics related to energy (photovoltaics, for example), or photo- and radio-biology. This group operates laser-based setups implementing transient absorption and fluorescence spectroscopies on multiple time scales (from femtosecond to nanosecond). It also has access to the other in-house facilities (ATTOLab-Orme for attosecond time resolution; UHI100 for the study of irradiation by "FLASH" electron beams), or to external facilities, particularly to accelerators of high-energy particles

Job Description

Detailed description

Within the DICO group of LIDYL, the incumbent will be responsible for a research project on ultra-fast processes in the liquid phase. In cooperation with the other scientists of the group, they will carry out their own high-level experimental scientific program by effectively using the characteristics of DICO's group facilities and the experimental facilities accessible in-house at LIDYL (ATTOLab-Orme and UHI100) and, for specific needs, those of external facilities. In this perspective, they will regularly build research projects in response to national and European calls for tenders in order to ensure the adequate funding of their scientific activity at the highest level. They will actively participate in the scientific life of the group and in the training of young scientists (doctoral students and post-doctoral associates). They will be able to forge links with the national and international scientific communities concerned, as well as with the various industrial players in the field. They will place their work within the framework of the CEA's missions.

More specifically, the incumbent will:

- Actively contribute to the scientific life of the DICO group studying ultrafast processes in the condensed phase.
- Develop an original and very high-level experimental fundamental research activity in the field of ultrafast spectroscopy using pulsed particle sources (photons, electrons or swift heavy ions) in order to study processes related to molecular ionization, recombination of radicals or excited states in the liquid phase.
- Propose research projects in the emerging topic of studies at the Radiolysis-Photolysis/Photochemistry frontier by developing innovative methodologies and devices, making the best use of the laboratory facilities which are based on ultrafast spectroscopy under radiation. A particular focus will be on radiolytic processes in the ionization tracks, as a promising research path also aligned with the activities carried out within the framework of the LaserLab-Europe networks and the Interdisciplinary Object iNanoTheRad of Paris-Saclay University .
- Prepare funding applications for the national and international calls for tenders in order to contribute to ensuring the sustainability of the funding of their scientific activity and the operation of the facilities.
- Participate in supervision activities (trainees, doctoral students, post-doctoral associates) and, in the medium term, supervise doctoral theses and obtain the “Habilitation à Diriger les Recherches” (HDR).
- Gradually develop scientific collaborations with solid state scientists within the DICO group, to study processes at liquid/solid interfaces.
- Contribute to the international visibility of the group and develop collaborations on experimental, theoretical and modeling aspects.
- Work within the framework of the CEA's missions and in cooperation with the programs of other national research organizations.

Required qualifications:

The candidate (F/M) must have solid prior experience in physics and chemistry (photolysis and/or radiation chemistry) on one (or more) laser or/and accelerator facilities.

They will have a strong knowledge in the physics of radiation-matter interaction.

Strong communication skills are required to ensure the visibility of their research activity at the international level. Being fluent in English (spoken and written) is essential.

Application/selection procedure:

The recruitment will be based on an open international competition.

Candidates must apply online via the CEA career website (<https://www.emploi.cea.fr/offre-de-emploi/liste-offres.aspx>) and by emailing a complete file to jobs.lidyl@cea.fr.

The application file will contain:

- a CV;
- a comprehensive record of professional achievements (publications, invitation, conferences, awards, etc...) including a short description of the main personal accomplishments (conceptual, technical,...);
- a cover letter highlighting the motivations for applying to this position;
- a research project (maximum 10 pages) explaining how it will complement and reinforce DICO's group research program;
- contact data of three professional references.

Application deadline: 15/05/2022 - 23:59 CEST.

Contact : jobs.lidyl@cea.fr.