Fiche technique

Fiche de compétences pour un équipe/labo en vue d’intégrer un consortium européen comme partenaire

Vous trouverez ci-dessous une proposition de structure pour vous aider à préparer une fiche de présentation et/ou d’offre de compétence.

Cette fiche est à retourner au chargé d’affaires LIP avec lequel vous êtes en contact à l’Europe.

**Appel à Projet**

Cluster 3-Destination 5 Disaster-Resilient Society 2024

**HORIZON-CL3-2024-DRS-01-05**

[Cost-effective sustainable technologies and crisis management strategies for RN large-scale protection of population and infrastructures after a nuclear blast or nuclear facility incident](https://www.horizon-europe.gouv.fr/cost-effective-sustainable-technologies-and-crisis-management-strategies-rn-large-scale-protection)

**Date limite: 20 novembre 2024**

**Merci d’indiquer**

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| --- |
| **Domaines d’applications de vos recherches**Matériaux pour l’optique et processus associés, en particulier matériaux scintillateurs pour la détection des rayonnement ionisants. |

**Générale et Specifique, résumant les activités principales des équipes de recherche à l’UCBL (2 pages max)**

* Personnes de contact : Prof. Christophe Dujardin (christophe.dujardin@univ-lyon1.fr)
* Description des activités scientifiques liées à l’appel (contribution potentielle de l’expertise de l’équipe au projet)

The team's expertise covers a wide range of topics relating to the physical chemistry of materials with a specificity on optical properties. Skills range from the synthesis of materials in the form of crystals, films or nanoparticles, to nanoassembly. The scientific themes are divided into several sub-themes: nanooptics, non-contact sensors, crystal growth, colloidal synthesis, laser ablation in liquid, laser photocatalysis materials, nano-optomechanics and scintillator materials. It is this last theme that can interact to a very large extent with the targeted theme of Cluster 3.

Scintillator materials are used to detect ionizing radiation. They are operated in a wide range of applications, including medical imaging, calorimetry in high-energy physics, detection of radioactive elements, and even X-ray-induced photodynamic therapy for enhanced cancer treatments. The applied part of our activity consists in devising new materials to meet the challenges of specific detections, designing and developing them in collaboration with other groups, using them in detectors, and testing their performances. One example is the European research program FET-OPEN SPARTE (https://www.sparte-project.eu), which aims to develop new porous scintillators for detecting pure beta emitting radionuclides in gases. The team has also been involved in the recently approuved RadonNet project to develop innovative measurement methods for the metrological detection of Radon. Through these collaborations, the team has access to a network of major national and international scientific players in the field. C.Dujardin is also chairman of the SCINT international conference series (http://scint.univ-lyon1.fr/icap\_website/view/2324), the major conference in the field, and a member of the steering committee of the Crystal Clear collaboration at CERN.

The team has the expertise and equipment needed to characterize scintillation materials during their development, as well as an extensive network of major scintillation collaborators.

* TRL/phases pour les essais/ le niveau de maturité sur l’activité ciblée

It depends on the project, but it goes from fundamental research up to spart-up creation. As a illustration C.Dujardin is a co-founder of the start-up company ICOHUP (https://icohup.com)

* Partenaires européens clés / récurrents : CEA-LNHB (laboratoire national de métrologie de la radioactivité), University Milano Biccoca, CERN, University of Cranfield, FZU and CTU in Czeck republic among many others
* Les partenaires industriels mobilisables (si possible) : ICOHUP, une start-up dont je suis le cofondateur. J’ai des contact avec Crytur, Nuvia , Thales…
* Projets européens /autres obtenus

https://ilm-perso.univ-lyon1.fr/~cdujardin/