

Postdoctoral Position at IRIG (CEA-Grenoble)**Synthesis and characterisation of organic photosensitizers for use in solar fuel production devices.****Characteristics of the position:**

Position / Employer	Post-Doctoral / CEA
Discipline	Organic Chemistry, Materials Science
Laboratory	SyMMES-STEP

Context and work environment: The SyMMES laboratory develops basic research in areas of high societal interest: zero-carbon energy, information and communication technology, biotechnology and human health. SyMMES hosts about 45 researchers and about 65 non-permanent researchers (PhD students and post-docs). Within the SyMMES unit, the STEP laboratory is an interdisciplinary team of chemists, physical chemists, electrochemists and physicists. The team works on the design, synthesis and investigation of innovative functional materials for energy applications. This postdoctoral project is part of the Synflux-Lumicals project, which aims to develop innovative strategies for the capture and use of light in solar fuel production systems. (<https://www.pepr-luma.fr/projet/synflux-lumicals/>)

Main activities: This postdoctoral project combines synthetic and physical chemistry. The postdoc will design and synthesise organic dyes modified with appropriate anchoring groups to interface with different materials. Prior to synthesis, the chemical structures of the molecules will be modelled by DFT calculations to verify that the energy levels match the thermodynamic requirements of charge transfer in the final assembly. He/she will explore different molecular engineering approaches to design photosensitizers with complementary absorption to increase the light-harvesting efficiency of the system. Push-pull organic dye structures will be developed and used for the co-sensitisation strategy. The photosensitizers will be grafted onto the surface of various inorganic semiconductors and characterised. The postdoctoral researcher will be involved in all steps of this project, from the design of the materials to their synthesis and characterisation of their optoelectronic properties. Scalable and sustainable synthesis routes will be prioritised to facilitate the transfer of the most efficient dyes to the consortium.

Desired profile: The candidate should have a PhD in organic chemistry. He/she will have to show a genuine interest in working on a multidisciplinary topic and in the field of energy materials. A strong background in organic chemistry and organic semiconductors is expected. Previous experience in the synthesis and characterisation of organic dyes or organic semiconductors for use in electronics or photovoltaics would be an advantage. The candidate must be able to work independently in a chemistry laboratory and have an interest in the field of renewable energy. Good verbal and written communication skills are required. We are looking for motivated and creative collaborators who are able to work in synergy with the other members of the group and with collaborators in the network. We will encourage and support them to develop their project to the highest level.

How to apply: Only applications that match the job description will be considered. Applications (CV + letter of motivation + letters of recommendation) should be sent to Renaud Demadrille (renaud.demadrille@cea.fr) and Cyril Aumaître (cyril.aumaitre@cea.fr). For More information: <https://www.demadrillegroup.com/>