# Post-doctoral position on photoelectrocatalytic production of solar fuels

Duration: 2025-2027 (24 months, starting November 2025)

Location: CEA Grenoble (France).

The position is opened in the SolHyCat team (https://www.solhycat.com/) of the Laboratory of Chemistry and Biology of Metals (LCBM), under the supervision of Dr. Murielle Chavarot-Kerlidou. The LCBM hosts a diverse community of researchers, from biologists to chemists, studying the role of metals in biological systems (cells, metalloenzymes) as well as their use in the development of fully synthetic systems for health and energy applications. In particular, over the past decade, the SolHyCat team has built a strong expertise in the design of bio-inspired catalysts and photosensitizers as well as their heterogenization on various (photo)electrode materials in order to further study these molecular systems under operational conditions in proof-of-concepts devices.
The research project seeks to design and build innovative molecular and hybrid photocathodes for the production of solar fuels and chemicals from water, $CO_2$ and sunlight. Various strategies will be developed to covalently immobilize bio-inspired molecular catalysts onto suitable photoelectrode materials. Photoelectrocatalytic performances will then be assessed and benchmarked before integration of the best-performing systems into lab-scale devices to demonstrate autonomous solar fuels production.

This project is funded by PEPR LUMA under the SYNFLUX-LUMICALS Moonshot project (https://www.pepr-luma.fr/projet/synflux-lumicals/).

**Qualifications:** The applicants should hold a PhD in inorganic chemistry, with a strong background in chemistry of materials and surface functionalisation; they will further benefit from prior experience in photoelectrochemical characterization and/or semiconducting metal oxide deposition techniques as well as knowledge on solar energy conversion devices (photovoltaics including DSSCs, water-splitting photoelectrochemical cells…). The successful candidate should demonstrate excellent organisational and communication skills (oral and written) in English, be highly motivated to explore new research areas and ready to work in a multidisciplinary collaborative environment.

Interested candidates are asked to send their CV and a motivation letter (with contact details of at least two referees) to Dr. Murielle Chavarot-Kerlidou (murielle.chavarot-kerlidou@cea.fr).

**The position is opened from November 1st 2025**. The candidates should take into account that the hiring procedure takes about two months. The salary will depend on experience (health insurance and benefits paid by the employer).