



Post-doctoral position in Chemistry

A two-year post-doctoral position in the field of Artificial Photosynthesis is available in Grenoble (France).

Project summary

Photosynthesis is a fascinating source of inspiration to design innovative molecular devices for the conversion and storage of solar energy. Applications of interest however rely on multielectronic catalytic processes whereas light-driven processes are single-electron events in essence. Nature perfectly masters this apparent mismatch thanks to specific cofactors, able to accumulate and then to relay multiple electrons at a time by coupling these processes with proton transfers. The project *PhotoAcc* aims at developing novel light-harvesting complexes able to store multiple reducing equivalents in their structure, by taking inspiration from these biological cofactors. Their synthesis will be supported by a (TD)DFT-predictive approach to allow tailormade optoelectronic properties; these properties will be deciphered by virtue of various electrochemical and spectroscopic characterizations, including advanced EPR techniques to identify the electron storage sites and their activity in light-driven multielectron/multiproton redox processes will be assessed.

PhotoAcc is funded by the French National Research Agency (ANR) and will benefit from the complementary expertise of four internationally-recognized research groups: the SolHyCat team at the LCBM lab (Murielle Chavarot-Kerlidou; www.solhycat.com) and the CAMPE team at the SyMMES lab (Drs Serge Gambarelli and Jean-Marie Mouesca; multifrequency EPR spectroscopy, DFT calculations on redox potentials) in Grenoble, the Molecular Photonic group (Prof. B. Dietzek; ultrafast spectroscopy) and the Theoretical Chemistry group (Dr S. Kupfer; TDDFT calculations) at the Friedrich Schiller University Jena (Germany).

The position is opened in the SolHyCat team to develop the synthesis of novel ruthenium photosensitizers possessing a pi-extended poly-*N*-heterocyclic ligand, to investigate their electronic properties and to study their reactivity in multielectronic redox processes.

Qualifications

The applicants should hold a PhD in molecular chemistry and have a strong background in organic synthesis; a first experience on the synthesis of *N*-heterocyclic aromatic compounds is highly welcome. The successful candidate should be ready to broaden her/his knowledge and to work in a multidisciplinary collaborative environment.

Applications

Candidates are invited to contact Murielle Chavarot-Kerlidou (murielle.chavarot-kerlidou@cea.fr) with:

- Cover letter (max. one page)
- CV
- Letters of recommendation or contact details for potential referees

The date of opening of the position is 1st of June (the candidates should take into account that the hiring procedure takes about two months).