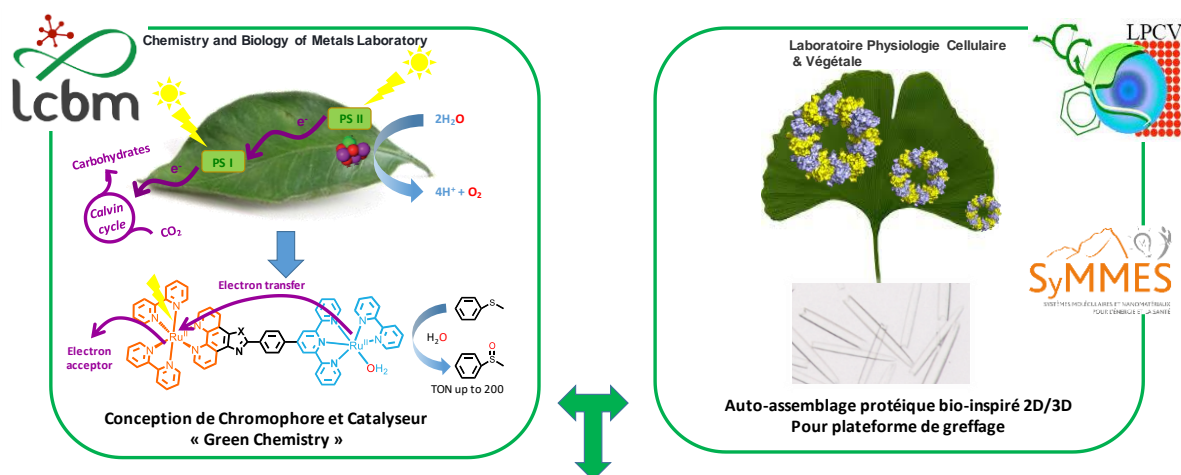
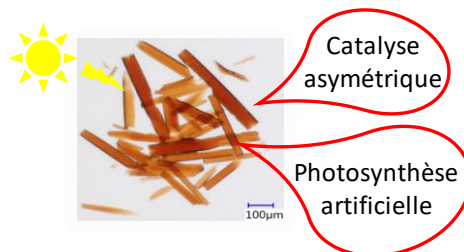


## Doctoral position: new functional biohybrid materials for photocatalysis (Beginning September-October 2019)

For the last decades, the development of **sustainable chemistry** becomes a priority for our society. For chemists and biochemists, Nature became a wonderful model of inspiration. Inspired by the photosystem able to convert  $\text{CO}_2$  into nutriment for the plant thanks to light, we developed several photocatalysts for oxidation using  $\text{H}_2\text{O}$  or  $\text{O}_2$  as a unique oxygen atom source and light to activate such inert molecules. (Hamelin et col, *inorg. Chem.* **2011**, *50*, 7954 and **2012**, *51*, 2222; *Angew. Chem. Int. Ed.* **2015**, *54*, 8415). On the other side, inspired by the self-assembly of plant proteins (C. Sayou et col. *Nature Comm.* 2016, 1122), we developed different protein platforms for the specific grafting of these photocatalysts.



Nouveaux matériaux bio-hybrides pour la photocatalyse



During this doctoral period, it is envisaged to gather these two approaches with the objective to generate **new functional hybrid materials for photocatalytic reactions (mainly artificial photosynthesis)**.

This is a collaborative project between three laboratories of the Interdisciplinary Research Institute of Grenoble localized at the CEA in Grenoble. The Laboratoire de Chimie et Biologie des Métaux is developing for several years bio-inspired catalytic and photocatalytic systems. The Laboratoire de Physiologie Cellulaire Végétale has the expertise in crystallization of plant protein. The Laboratory des Systèmes Moléculaires et Nanomatériaux pour l'Energie et la Santé works on the developments of microfluidic systems associate with SPR characterization, an essential part of this project. Web site: <http://big.cea.fr/drf/big/Pages/Presentation.aspx>

**Candidate's profile:** Candidates should have solid skills in both organic and inorganic syntheses, as well as in spectroscopic methods. The successful candidate should have a good mix of synthetic and spectroscopic competence, physical/chemical intuition and independent thinking.

**Grenoble location and activity:**

<http://en.wikipedia.org/wiki/Grenoble>



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