



The CEA recruits a Scientist in “Molecular genetic manipulation of microalgae or cyanobacteria for biofuel or green chemical production”

A permanent scientist position is open in the team “Bioenergy and Microalgae” (EBM) within the BIAM institute located in the Cadarache centre, Southern France (Provence)

The scientist will initiate projects on genetic manipulation (genetic engineering, synthetic biology or genome editing) of microalgae to introduce novel pathways or improve existing pathways for the production of molecules of interest.

Studies will be conducted on the model microalga *Chlamydomonas reinhardtii*, or other algal or cyanobacterial species the scientist may propose to develop within the team. Scientific questions can be large and range from improving growth and CO₂ assimilation, to enhancing lipid storage, or re-directing carbon flux to booster production of molecules of interests, but it should fit in the major mission of the host team (see description below).

Mission and activities of the host team

You will benefit from the expertise of the host team (<https://www.cite-des-energies.fr/biam/recherche/ebm/>) and from the environment of the BIAM institute, CEA and Aix-Marseille University (<https://www.cite-des-energies.fr/biam/plateformes-technologiques/>).

You will be working in the "Bioenergy and Microalgae" team, which is composed of 4 scientists, 4 engineers, 3 technicians and usually 3-5 PhD students and postdocs.

The main objectives of the EBM team is to explore the potential of microalgae for biotechnological applications especially in the field of bioenergy. Specifically, we study the processes of photo-reduction of CO₂ to the formation and storage of energy-rich molecules (such as lipids and alkanes). The research is based on genetic, biochemical, lipidomic and biophysical approaches developed on model organisms such as *Chlamydomonas reinhardtii* to identify the key genes of photosynthesis and lipid metabolism, and on an exploration of biodiversity to search for enzymes, metabolic pathways or photosynthetic microorganisms of interest.



The recent work of the team has led to several discoveries such as i) the light driven synthesis of hydrocarbon in microalgae by a novel photoenzyme, the fatty acid photodecarboxylase (FAP); ii) the source(s) of energy essential for CO₂ concentrating mechanisms (CCM) in microalgae; or iii) the importance of energy trafficking between subcellular organelles for CO₂ fixation and cell fitness ([publications](#)). These work are supported by various tools we have developed over the years which are collectively housed in the [HelioBiotec platform](#).

We cover a wide range of fields from algal physiology to lipid metabolism, photosynthesis, and the discovery of new enzymes. We strive to shed light on the fundamental understanding of algal physiology and metabolism, with a view to applications in the fields of bioenergy, CO₂ fixation and the production of high value-added molecules.

Requirement

The position is open to candidates with a PhD and at least one year of postdoctoral experience. Candidates should have a strong background in genetic engineering, synthetic biology or genome editing. Experience in microalgae would be a plus.

The ability to interact with other researchers in the team and to work as a team is very important. The person recruited will also be expected to write grant proposals and scientific publications and will therefore also need good oral communication and writing skills. He/she will also have to supervise master students, PhD students or post-docs.

A good command of English is essential. French is not necessary in the laboratory but its learning will be recommended to facilitate the insertion in the social life.



Application procedure

Please **send your application file** at cite-des-energies@cea.fr, including:

- A cover letter
- Your recent CV including a list of publications
- Major achievements/research contributions (2-4 pages) and general outlines of the proposal (about 1 page). **The whole document (Arial 12, single space, all margins 2 cm) must not exceed 5 pages.**
- 2 to 3 letters of recommendation.

Please, submit your application as a single pdf file and name the file with your last name first and the name of team (EBM), *e.g.* DUPONT_application_EBM.pdf.

The deadline to apply is April 19, 2022 11:00 p.m. CET.

Shortlisted candidates will be invited to discuss with the host team and propose a 3-year research project (3-5-pages). Interviews of candidates will be held as of June 2022 for a position in the fall of 2022.

CEA's life quality

Expected salary range at the beginning: net salary from 2620€/month to 3100€/month for 1 to 6 years of postdoctoral experience.

Social benefit: 52 days of annual paid holidays; retirement plan; French national social security for health and retirement, free school system and international school for foreign children.

For scientific questions, please contact: Yonghua Li-Beisson (yonghua.li@cea.fr).