# JOB OFFER

# PhD Candidate in microalgae synthetic biology and bioprocess engineering

The GBQQ Research Group at the Institut Químic de Sarrià (IQS) is seeking an outstanding and highly motivated candidate **to pursue a PhD in synthetic biology and microalgal biotechnology**. The selected candidate will be encouraged and supported to apply for **competitive predoctoral fellowships** and will carry out their doctoral research within the recently awarded project (PID2025-174052OB-I00) by the Ministerio de Ciencia, Innovación y Universidades:

## "CHLOROENGIN – Synthetic Biology and Bioprocess Engineering for Advancing Chloroplast-Based Bioproduction in Green Microalgae"

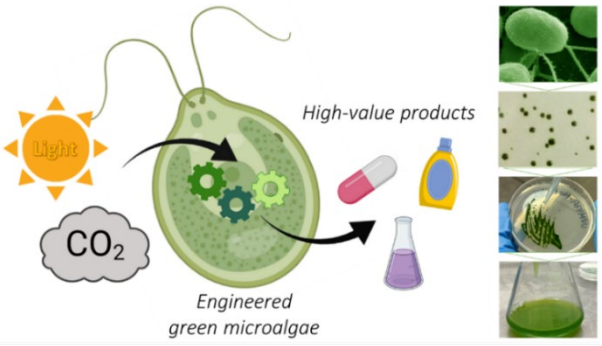
## PROJECT DESCRIPTION

Microalgae are unicellular photosynthetic organisms that are emerging as important players in industrial biotechnology. They have several advantages such as rapid growth, reduced water use, no need for arable land, and often GRAS status, so their role in the bioeconomy is increasing. Among them, *Chlamydomonas reinhardtii* has become a reference model for chloroplast engineering, as its plastome enables targeted genome modification and high recombinant protein expression. This PhD project aims to apply synthetic biology and bioprocess engineering principles to develop a platform based on the chloroplast of green microalgae as a chassis to produce valuable biocompounds.

The PhD candidate can join one of the two ongoing research lines:

**(i)** **Expanding the Modular Cloning Mocloro** toolkit previously published by our group (link) and developing regulatable gene expression systems for advanced chloroplast genome engineering.

(ii) **Bioprocess engineering for scalable chloroplast-based biomanufacturing.** The PhD project will develop and optimize bioprocesses for the efficient production of high-value recombinant biomolecules in the chloroplast of *Chlamydomonas reinhardtii.* The research will address strain-to-bioprocess integration by optimizing heterotrophic high-cell-density cultivation, bioreactor operation, and process monitoring to maximize product titer, productivity, and scalability.




*More information at*:
https://planaslab.iqs.edu/research/synthetic-biology-and-molecular-biotechnology-in-green-microalgae/

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## POSITION OFFERED

The successful candidate will:

- Enrol the Bioengineering PhD program at Universitat Ramon Llull (link).
- Be based at IQS-School of Engineering, an internationally renowned research Institution in the field of Chemistry, Biosciences and biotechnology.
- Receive advanced training in microalgae physiology, molecular biology, bioprocessing and data-analysis methodologies.
- Participate in national and international research collaborations.
- Have opportunities to present results at scientific conferences and contribute to hight-impact peer-reviewed publications.
- Receive support to prepare competitive predoctoral fellowship Applications (FI, FPU, INPhINIT).

## CANDIDATE PROFILE

- **Master degree** in Biotechnology, Biochemistry, Biology or related fields.
- **Outstanding academic record**, as academic excellence is a key criterion in the evaluation of competitive predoctoral fellowships. Candidates with an average grade of **8.5/10 or above**, or an equivalent international qualification, are particularly encouraged to apply.
- Commitment to applying for competitive predoctoral fellowships. If candidate is not awarded an external fellowship, it may still be considered for funding subject to the availability of project funds and performance during the selection process.
- Experience in some of these fields: **molecular biology** or/and **bioreactor cultivation**.
- Strong motivation, curiosity, creativity and a proactive attitude towards research.
- Ability to work both independently and collaboratively within an interdisciplinary research team.

## HOW TO APPLY

The following documents should be added to the application:

- Motivation letter explaining why you would be a good candidate for this position and our team.
- *Curriculum Vitae.*
- Academic record (Undergraduate and Master's Degrees) including final average grade.

Application: *https://cezanneondemand.intervieweb.it/iqs/jobs/phd-candidate-in-microalgae-synthetic-biology-and-bioprocess-engineering-63004/en/*

Applications will be reviewed on a rolling basis. Candidates are encouraged to submit their documentation **before 14 September 2026** to allow sufficient time to assess eligibility and prepare fellowship applications.