



Call: HORIZON-MSCA-2021-DN-01

OPEN POSITION (DC3)

PhD Candidate on

Construction of artificial metalolyses for carbon-carbon bond formation reactions

The PhD project

ITN- Marie Skłodowska-Curie Actions BiodeCCodiNNg: Decoding novel reaction chemistries in biocatalysis – Training Europe's next visionaries for a sustainable future. We are currently looking for a highly motivated **Doctoral Candidate** to embark on a path towards their PhDs at the **Institute for Advanced Chemistry of Catalonia (IQAC)** (Supervisor Prof. Pere Clapés), one of the research centres of the Spanish National Research Council (CSIC). This fellowship position will begin between May 1st and July 1st 2023.

The PhD research will focus on:

- (i) Interdisciplinary project on biocatalysis and chemistry
- (ii) Genome-guided identification of novel carbon-carbon bond forming enzymes (Industrial secondment),
- (iii) Cloning, expression and biochemical characterization of identified candidates,
- (iv) Elucidation of enzyme promiscuity,
- (v) Optimization of the activity and selectivity of selected candidates by directed evolution techniques.

The candidate will also be required to participate in the scheduled training and workshop activities organized by the **BiodeCCodiNNg** consortium. As a Marie Skłodowska-Curie Actions fellow, you are also expected to contribute your time in the dissemination of your project's result through public engagement and various scientific platforms.

What do we look for?

• Qualifications and Competences

- An outstanding M.Sc. degree in Chemistry, Biological chemistry, Biotechnology, or related field,
- Eligible as PhD student at University of Barcelona (Spain),
- Research experience in organic synthesis, analytical methods (HPLC, GC, MS, NMR etc.), enzyme purification and assays and notions of molecular biology (molecular cloning)
- Ability to work in an international team,
- Inter- and multidisciplinary thinking,
- High motivation,
- An integrative and cooperative personality with excellent communication and social skills,
- Fluency in English – written and oral.

Eligibility Criteria

- To qualify for this position, **the applicant must be in the first 4 years (full-time equivalent) of their research career**. This is calculated from the date they obtained a qualification (Masters or equivalent) allowing them to embark on a doctorate.
- At the time of recruitment, the applicant must not have resided (or carried out his/her main activity e.g. work, studies, etc.) in Spain, for more than 12 months in the last 3 years immediately prior to the reference recruitment date.

Working conditions

- Contract duration: 36 month
- Target start dates: between May 1st and July 1st 2023

The group

The position we offer will be embedded in the Institute for Advanced Chemistry of Catalonia (IQAC) within the Department of Chemical Biology in the Biotransformation and Bioactive Molecules group (<https://www.iqac.csic.es/research/departments/biological-chemistry/biotransformationa-and-bioactive-molecules/>)(<https://pereclapes.wordpress.com/>). The research of our group is focused on elucidate novel stereoselective biocatalysts based on natural and artificial metallolyses for new-to-nature stereoselective C–X (X = C, N, O, S) bond formation. Metagenomic prospecting and directed evolution is used to identify hits, followed by focused mutagenesis to fine tune their activity and selectivity. The new evolved biocatalysts are screened toward diverse new-to-nature transformations using key enabling high-throughput screening (HTS) tools. Our final goal is to provide a groundbreaking biocatalyst platform to perform new-to-nature C–X bond formation reactions for a wide variety of molecules, expanding the portfolio of available biocatalytic reactions and opening new biosynthetic routes inaccessible by conventional biocatalysis.

The institute

IQAC-CSIC carries out research of excellence in chemical sciences to address and solve problems of socio-economic relevance, mainly those related to human health, the

sustainability of chemical processes and products, and the needs for novel materials for different applications. The research developed at IQAC is organized around two main nodes: Biological chemistry and surfactants and nanotechnology. The biological chemistry node carries out fundamental and applied chemical research involving the development of cutting-edge chemical methods among them biocatalysis. Biocatalysts for the obtaining of molecules of interest in different fields, their modification by means of genetic engineering assisted by computational design and the creation of a toolbox of enzymes with a la carte activities and selectivity, in one of the relevant research lines in IQAC.

In addition, our Institute holds a set of scientific and technical facilities run by highly qualified scientists and technical personnel with a solid background and long lasting expertise. These facilities are available not only to IQAC research groups, but also to potential users from both academia and private institutions. In any case, the technical services from IQAC are always wide open to attend any inquiry and to offer their best efforts to find adequate responses to specific needs.

How to apply?

Application procedure

To apply for the position, kindly provide:

- (i) A letter of motivation including a statement of your research interests, relevant skills and experience and an explanation for the choice of position(s);
- (ii) A CV including publication list (if applicable);
- (iii) Names and contact details of three referees willing to write confidential letters of recommendation;
- (iv) Copies of relevant diplomas including explanation of international grades.

Please upload applications only according to instructions at <https://biodeccodinng.eu/recruitment> and click on DC3 (<https://university-of-groningen.breezy.hr/p/7ebbb9e73bb201-phd-position-dc3-within-eu-doctoral-network-biodeccodinng-new-generation-of-cczymes-based-on-natural-and-artificial-dmsp-lyases>)

Deadline

You may apply until 10th of January 11:59pm / before 11th of January 2023 Dutch local time (CET) for this position by means of the online application form (click on "**Apply**" below on the advertisement on the [BiodeCCodiNng website](https://biodeccodinng.eu)).