

DC 13 | Non-heme iron dependent halogenases in complex chemoenzymatic cascades in flow

ORGANISATION

The **University of Bern** (UniBe) is the third largest university in Switzerland and was ranked 104 in the 2025 Times World Universities Rankings. With almost 20,000 students, UniBe offers a really vibrant environment set within the city centre of Bern, minutes from the train station and very well served by public transports. The position we offer will be hosted within the Department of Chemistry, Biochemistry, and Pharmaceutical Sciences (DCBP) (https://www.dcbp.unibe.ch/index_eng.html) which is highly interdisciplinary in terms of research groups and houses state of the art equipment from X-ray to NMR and advanced Mass spec facilities. The DCBP has a focus on sustainability and catalysis in different forms is a core theme in many laboratories. In 2025, the DCBP has made a concrete move to embed biocatalysis within the organic chemistry domain and a full floor in the building is dedicated to the laboratories to Prof. Paradisi and Buller. Prof. Paradisi's research group (<https://paradisiresearch.com>) is composed by researchers with different backgrounds (biology, synthesis, computational) as well as nationalities where inclusivity is key to the success of the team. The Paradisi group focusses on applied biocatalysis, with a very strong chemical and engineering component. We have a keen interest in the development of alternative biocatalytic strategies for synthetic and industrial applications with the aim of integrating them in multistep (chemical) cascades. Predominantly, our research focuses on the use of enzymes (purified or whole cell systems, in free or immobilized form) in synthetic applications, with the specific scope of using them in continuous systems (Flow Biocatalysis).

ROLES AND RESPONSIBILITIES

The main part of your PhD research (4 years in total) will be carried out at **the University of Bern** (UniBe, Switzerland) under the supervision of **Prof. Paradisi** in the Department of Chemistry, Biochemistry, and Pharmaceutical Sciences. Within these four years, an academic research stay (of 12 months) will take place at the **University of Groningen** (RUG, the Netherlands) under the supervision of **Prof. Sandy Schmidt**. Additionally, an industrial secondment at the company **inSEIT** (Switzerland) is foreseen. The Horizon Europe Marie Skłodowska-Curie Actions (MSCA) – Doctoral Network (DN) project starts in January 2026. The start of the PhD project is planned for as early as April 2026 and latest in December 2026. Your **PhD degree** (so-called double degree) will be awarded based on successful completion of the research work from **two universities (UniBe, Switzerland and RUG, the Netherlands)**. You will also be required to participate in the training events and workshops organized by the DN- Joint Doctorates (JD) program. As a MSCA fellow, you are also expected to **contribute your time in the dissemination of your PhD project's result** through public engagement and other scientific platforms. Additional duties at the University of Bern will include mandatory undergraduate lab supervision.

The PhD research will focus on:

- (i) Interdisciplinary project on bioinformatics, biocatalysis, and chemistry,
- (ii) screening of lysine cyclodeamidases (LCDs) and identification and selection of non-heme iron-dependent halogenases (academic secondment) with activity towards an array of lysine-like substrates,
- (iii) enzyme expression and characterization,
- (iv) evaluation of candidate enzymes for selectivity, TOF and overall performance in chemoenzymatic cascade,
- (v) enzyme immobilization (industrial placement),
- (vi) enzyme engineering,
- (vii) implementation of chemo-enzymatic reaction cascades in continuous flow.

Primary supervisor: Prof. Dr. Francesca Paradisi

Secondary supervisor: Prof. Dr. Sandy Schmidt

Recruiting institution: University of Bern (Bern, Switzerland)

Double degree awarding institution: University of Groningen (the Netherlands)

QUALIFICATIONS

- An outstanding M.Sc. degree in Chemistry, Biological chemistry, Biochemistry, or related field,
- Eligible as a graduate student at the University of Bern (Switzerland) and University of Groningen (the Netherlands),
- Research experience in organic chemistry, analytical methods (HPLC, GC, MS, NMR etc.), enzyme purification and assays, experience in molecular biology (molecular cloning) is desirable,

- 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.

CONDITIONS OF EMPLOYMENT

We offer you in accordance with the regulation of Swiss National Science Foundation

- a salary ranging between 47,040 to 55,000 CHF per year
- the contract is issued on a yearly bases. Prolongation of the contract is contingent on sufficient progress within the year to indicate that a successful completion of the PhD thesis within the remaining time is to be expected.

The preferred starting date is between April 1st and July 1st 2026. Details on the conditions of employment can be found here:

https://www.unibe.ch/unibe/portal/content/e152701/e322683/e325053/e901473/ul_rgl_anstellung_final_en_ger.pdf

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 up to 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://haloverse.eu/recruitment/>.

Address applications to: Prof. Dr. Francesca Paradisi

The University of Bern strives to offer a respectful and inclusive study and work environment. We believe that working on our core values of inclusion and equality are a joint responsibility and we are constructively working on creating a socially safe environment. Diversity among students and staff members enriches academic debate and contributes to the quality of our teaching and research. For more information, see also our webpage: https://www.unibe.ch/university/portrait/self_image/equal_opportunities/topics/respectful_and_inclusive_study_and_work_environment/index_eng.html. Our selection procedure follows the guidelines of the [European Commission's European Code of Conduct for recruitment of researchers](#).

Unsolicited marketing is not appreciated.

APPLICATION DEADLINE

You may apply until 31st of December 2025 11:59pm / before 1st of January 2026 Central European Time (CET) for this position by means of the online application form (click on "Apply" below on the advertisement on the HaloVerse website).

MARIE SKŁODOWSKA-CURIE ACTIONS
Doctoral Networks (DN)



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