

ESR 11 | Bioreactor design for gas fermentations of H₂ oxidising bacteria

ORGANISATION

The **Austrian Centre of Industrial Biotechnology** (acib) is one of the leading research centres in the field of industrial biotechnology. acib bridges the gap between academic research and producing industry and connects 180+ international scientific and industrial partners. Around 200 acib employees develop new, environmentally friendly, economically and technically advanced processes for the biotechnological, pharmaceutical and chemical industry. Acib is tightly connected to and mainly located at leading Austrian universities in Graz, Vienna, Tulln, Innsbruck.

ROLES AND RESPONSIBILITIES

The main part of your PhD research (3 years in total) will be carried out at the **acib GmbH** (Graz, Austria) under the supervision of **Assoc. Prof. Regina Kratzer**. Within these three years the PhD project includes an academic research stay of 9 months at **Toulouse Biotechnology Institute** (INSA) under the supervision of **Prof. Stéphane Guillouet** and an industrial secondment at the company **Zeta GmbH** (Lieboch, Austria). The ConCO₂rde project is within the H2020 Marie Skłodowska-Curie Actions (MSCA) – Innovative Training Network (ITN) and starts in January 2021. The date of recruitment and start of the PhD project is planned for May 2021 and latest on December 2021. Your **PhD degree** will be awarded based on successful completion of the research work **from two universities** (Graz University of Technology, Austria and Université de Toulouse, France) in the framework of the ITN-European Joint Doctorates (EJD) program. You will also be required to participate in the **training events and workshops** organized by the ITN-European Joint Doctorates (EJD) program. As a Marie Skłodowska-Curie Actions (MSCA) fellow, you are **expected to disseminate your PhD project's findings** in peer-reviewed journals and through public engagement and other scientific platforms.

The PhD research will be part of the Work Package 3 “Process intensification of gas-driven processes” of the ConCO₂rde project. The project aims at developing efficient, microbial CO₂-fixation processes for the production of materials and chemicals. The integration of molecular biology, biocatalysis and process intensification will provide a comprehensive education in the field of Biotechnology. The aim is to decipher the bottlenecks at the technological levels in order to run gas fermentations at high cell densities within pressurized bioreactors in order to speed up the development of the future bioprocess from CO₂ as unique Carbon source.

The PhD research of ESR11 will especially focus on:

- (i) Characterization of microbial strains under autotrophic conditions.
- (ii) Bioreactor design for lithoautotrophic (H₂/O₂/CO₂) fermentation at different scales.
- (iii) Intensification of lithoautotrophic fermentation processes (academic secondment).
- (iv) Implementation strategy with industry partner.

Primary supervisor: Assoc. Prof. Regina Kratzer (regina.kratzer@tugraz.at)

Recruiting institution: acib GmbH (Austria)

Double degree awarding institutions: Graz University of Technology (Austria), INSA de Toulouse (France).

REQUIREMENTS

- An outstanding M.Sc. degree in Chemical Engineering, Bioprocess Engineering, Process Engineering or related field
- Eligible as a graduate student at Graz University of Technology
- Research experience in (bio)reactor design, (bio)reaction performance evaluation (reaction kinetics, growth kinetics), analytical methods (HPLC, GC, MS, NMR etc.), biotechnology (e.g. protein expression and characterization)
- 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.

CONDITION OF EMPLOYMENT

We offer you an working contract

- for a full-time position (1.0 FTE, 40h/week)
The 1.0 FTE appointment is temporarily for a specified period of three years. The preferred starting date is between May 1st and July 1st 2021.
- a salary according to the rules of Marie Curie-Sklodowska innovative training networks which equals in Austria a yearly gross payment of EUR 31,719 (before taxes) + EUR 7,200 mobility allowance
an additional family allowance is eligible if the researcher has a family (linked by marriage or equivalent and/or dependent children) upon recruitment

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;
- (ii) A CV including publication list;
- (iii) Names and contact details of three references willing to write confidential letters of recommendation.

Please upload applications only according to instructions at www.conco2rde.eu.

Of course, we welcome applicants of all sexes (f/m/x), backgrounds and ages. We are an equal opportunity employer and value diversity in our applications. Our selection procedure follows the European Commission guideline for recruitment in the European Charter for Researchers and the European Code of Conduct for recruitment of researchers.

APPLICATION DEADLINE

31st of January 2021 11:59pm Central European Time



Innovative Training Network – European Joint Doctorates

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