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UNIVERSITET

PhD student in Chemistry – Specializing in Microbial Chemistry

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Uppsala University is a comprehensive research-intensive university with a strong international standing. Our ultimate goal is to conduct education and research of the highest quality and relevance to make a long-term difference in society. Our most important assets are all the individuals whose curiosity and dedication make Uppsala University one of Sweden's most exciting workplaces. Uppsala University has over 54,000 students, more than 7,500 employees and a turnover of around SEK 8 billion.

The Department of Chemistry - Ångström conducts research and education in the chemistry field. The department has more than 250 employees and has a turnover of 250 million SEK. At the department's six programs, we conduct very successful research of a high international standard. We have a large number of externally funded research projects, often with international cooperation and we see continued good growth in our subject area. The department has education assignments in engineering programs and master's programs.

The student will be part of the Microbial chemistry research group, which is highly recognized internationally, is part of the Department of Chemistry – Ångström at Uppsala University. The group is situated in a modern building at the Ångström Laboratory. The research at the department spans from organic, inorganic and physical chemistry to biochemistry, biophysics, synthetic biology and microbial chemistry with strong cross-disciplinary collaborations being a characteristic of the research environment.

More information is available on our [website](#).

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Project description

The research project is part of an EU funded network (PhotoSynH2), which aims at developing novel methods for the production of green H₂ as a solar fuel. The hydrogenase enzymes are key components in any such technology, as these are central to H₂ metabolism and catalyze the formation and oxidation of H₂ gas. To realize their biotechnological potential, we need highly efficient hydrogenase enzymes that are well integrated into the metabolic pathways of technologically relevant host organisms. The project will address this challenge via characterization of novel examples of this diverse enzyme family, followed by their optimization via rationale design to ensure stable and high H₂ productivity in photobioreactors.

Work duties

The applicant will work in an interdisciplinary project that involves synthetic biology, biochemistry, molecular biology and biophysics. The primary role of the PhD student in the project will involve the expression and characterization of novel [FeFe] hydrogenases of potential biotechnological relevance in cyanobacterial hosts. Selected enzymes will be fused to components of the photosynthetic electron transport chain with the aim of improved performance. The work will be performed by the PhD student in close collaboration with other partner laboratories at Uppsala University and abroad.

The main duties of doctoral students are to devote themselves to their research studies which includes participating in research projects mentioned above and third cycle courses. The work duties can also include teaching and other departmental duties (no more than 20%).

Eligibility requirements

A person meets the general admission requirements for third-cycle courses and study programmes if he or she:

- has been awarded a second-cycle qualification, or
- has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second cycle, or
- has acquired essentially equivalent knowledge in some other way in Sweden or abroad.

Required qualifications

- Degree or equivalent as above in molecular, applied and/or synthetic biology, biochemistry or biophysics.
- Experience in working with genetic engineering (during studies or in industry).
- Very good oral and written proficiency in English.
- The ability of the PhD student to be innovative and not afraid to go outside traditional discipline.

Consideration will also be given to good collaborative skills, drive and independence, and how the applicant's experience and skills complement and strengthen ongoing research within the department, and how they stand to contribute to its future development.

Desirable qualifications

- Advanced knowledge and/or practical experience in molecular and/or synthetic biology or biochemistry is desirable.
- Prior experience in working with genetically engineering prokaryotic microorganisms will be beneficial.
- Prior experience in working with cyanobacteria or other photosynthetic microorganisms will be beneficial.

The rules about PhD students are found in the Higher Education Ordinance Chapter 5 §§1-7 and the [university's rules and guidelines](#).

Application procedure

The application should include a statement of research interest, CV, certificates of exams, degrees and grades, a copy of Master thesis, published article or relevant materials, if available. Also, contact information of at least two reference persons should be included.

About the employment

The employment is a temporary position according to the Higher Education Ordinance chapter 5 § 7. Scope of employment 100 %. Starting date 2022-11-01 or as agreed. Placement: *Uppsala*

For further information about the position, please contact: :Professor Peter Lindblad, Peter.Lindblad@kemi.uu.se or Associate Professor Gustav Berggren, Gustav.Berggren@kemi.uu.se

Please submit your application by 20 October 2022, UFV-PA 2022/3248.

Are you considering moving to Sweden to work at Uppsala University? [Find out more about what it's like to work and live in Sweden.](#)

Please do not send offers of recruitment or advertising services.

Submit your application through Uppsala University's recruitment system.

Placement: Department of Chemistry - Ångström Laboratory

Type of employment: Full time , Temporary position longer than 6 months

Pay: Fixed salary

Number of positions: 1

Working hours: 100 %

Town: Uppsala

County: Uppsala län

Country: Sweden

Union representative: Seko Universitetsklubben seko@uadm.uu.se

ST/TCO tco@fackorg.uu.se

Saco-rådet sacco@uadm.uu.se

Number of reference: UFV-PA 2022/3248

Last application date: 2022-10-20

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