



UPPSALA
UNIVERSITET

PhD position in Biophysical Chemistry

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 260 employees and has a turnover of 290 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. More information is available on our [website](#).

[Read more about our benefits and what it is like to work at Uppsala University](#)

Subject description/research project: Within the Program Molecular Biomimetics we are looking for a highly motivated and educated candidate eager to contribute to our research concerning the mechanisms of gas producing and processing enzymes of high energy relevance. Specifically, you will be working on both the mechanism of water oxidation in photosystem II and H₂ formation by hydrogenases employing biochemical and biophysical techniques.

The successful candidate will work within the world-leading and friendly teams of Prof. Johannes Messinger and Ass. Prof. Gustav Berggren, and have access to state-of-the-art experimental and computational research facilities that are supported

by competent scientific staff. You will also benefit from attractive working conditions (4-year salary, no tuition fees, comprehensive health care, and ergonomic working environment). This project involves collaboration with leading groups at Uppsala University, Germany, and the USA.

Work duties: You will be studying the mechanisms of biological water oxidation in photosystem II and of the interconverting protons and H₂ by hydrogenases. Special emphasis shall be given to the elucidation of protein cofactor interactions that infer reactivity and stability to the respective metal cofactors. For this, you will learn and work with several different biochemical and biophysical techniques, such as growing of cyanobacteria/*E. coli*, enzyme isolation, membrane-inlet mass spectrometry, electron paramagnetic resonance, FTIR, and cryo-EM. You will also have the chance to perform mutagenesis for obtaining site specific mutants that specifically alter the protein-cofactor interactions and/or to participate in snapshot serial femtosecond crystallography experiments at x-ray free electron lasers that allow atomistic insight into reaction dynamics. You are expected to collaborate within the research program and other groups at the university, as well as nationally and internationally. Your work duties thus will involve travel to research facilities, collaborating laboratories and/or conferences. You will benefit from our international and diverse research environment, as well as from close interactions within our interdisciplinary team of PhD students, postdocs, researchers, engineers and professors.

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

Requirements: We are looking for a PhD candidate with enthusiasm for experimental work, who has also a strong interest and ability in data analysis. The candidate must have very good oral and written proficiency in English.

Consideration will also be given to good collaborative skills, drive and independence, and how the applicant, through his or her experience and skills, is deemed to have the abilities necessary for successfully completing the third cycle programme.

To meet the entry requirements for doctoral studies, you must

- hold a Master's (second-cycle) degree in Biochemistry, Chemistry, Physics, or another relevant field, or
- have completed at least 240 credits in higher education, with at least 60 credits at Master's level including an independent project worth at least 15 credits, or
- have acquired substantially equivalent knowledge in some other way.

Additional qualifications: A solid background in protein isolation and biophysical experiments. Previous experience/knowledge in photosynthesis and/or hydrogenase research is strongly meriting.

Rules governing PhD students are set out in the Higher Education Ordinance chapter 5, §§ 1-7 and in [Uppsala University's rules and guidelines](#).

About the employment: The employment is a temporary position according to the Higher Education Ordinance chapter 5 § 7. Scope of employment 100 %. Starting date 1 May 2023 or as agreed. Placement: Uppsala

Application procedure: The application should include a statement of motivation/research interest, CV, certificates of exams, degrees and grades, and a one-page summary of the Master thesis (or equivalent). Contact information of at least two reference persons should be included.

Selection procedure: shortlisted candidates will be interviewed by several persons, are requested to present their Master thesis in a group meeting (in person/video) and may additionally be asked to demonstrate their writing skills.

For further information about the position, please contact: Prof. Johannes Messinger, phone: +46 70 167 9843, email: johannes.messinger@kemi.uu.se
Ass. Prof. Gustav Berggren, phone: +46 18 471 6583, email: gustav.berggren@kemi.uu.se

Please submit your application by 17 April 2023, UFV-PA 2023/1234.

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

Pay: Fixed salary

Number of positions: 1

Working hours: 100 %

Town: Uppsala

County: Uppsala län

Country: Sweden

Union representative: ST/TCO tco@fackorg.uu.se

Seko Universitetsklubben seko@uadm.uu.se

Saco-rådet saco@uadm.uu.se

Number of reference: UFV-PA 2023/1234

Last application date: 2023-04-17

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