

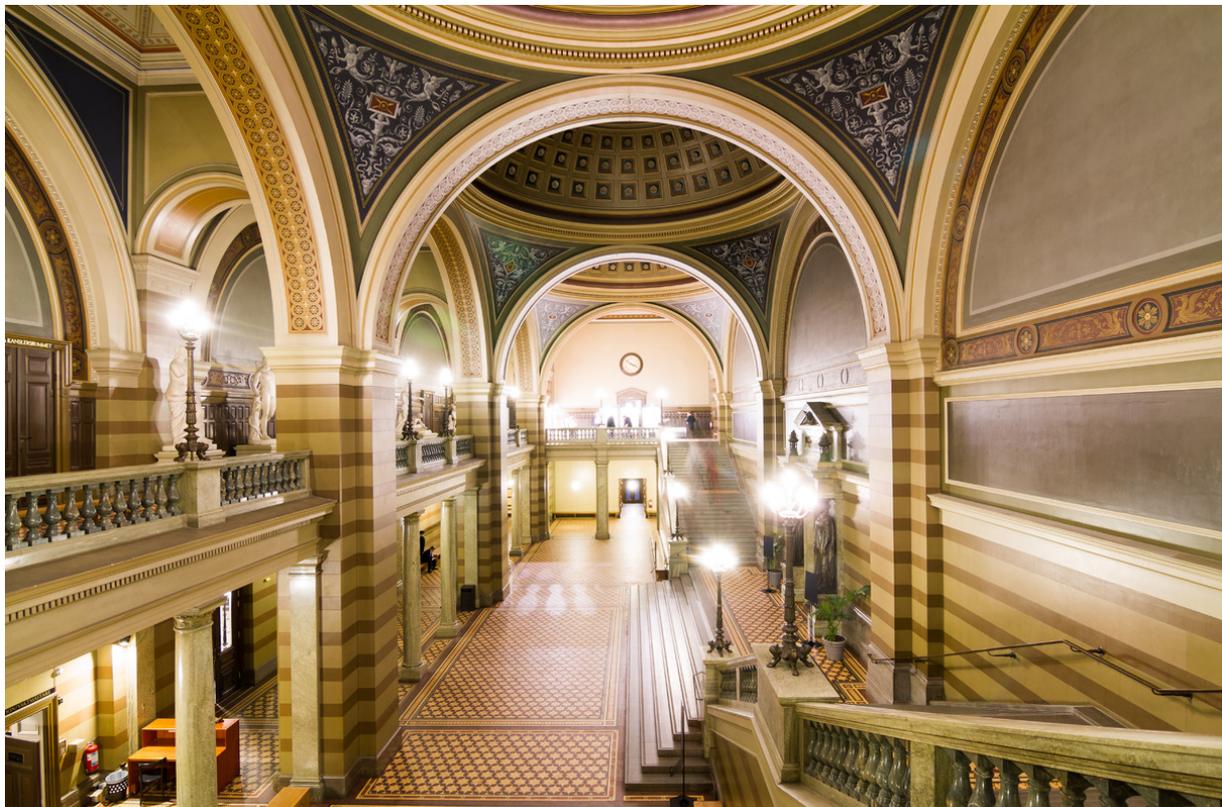


UPPSALA  
UNIVERSITET

# PhD student in Chemistry – Specializing in Molecular Biomimetics

---

Published: 2022-10-25



**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](#).

The research project is focused the metalloenzyme [FeFe] hydrogenase, and involves biochemistry, biophysics (spectroscopy and electrochemistry) and bioinorganic chemistry. The hydrogenase enzymes are central to hydrogen metabolism, as they catalyze the formation and oxidation of H<sub>2</sub> gas. This chemistry is enabled by a biologically unique organometallic cofactor. An increased understanding of these enzymes is critical for our understanding of the biological H<sub>2</sub> cycle, and its impact on human health as well as general biodiversity. Due to their remarkable efficiencies they are also intensively studied in (bio)technological applications. The project follows one of the major project lines in the group, which focuses on the biochemical characterization of novel examples of this diverse enzyme family. In parallel, it will also involve the development of new methods for studying their mechanism using advanced, time-resolved, spectroscopic techniques.

Read more about our benefits and what it is like to work at Uppsala University

### **Duties**

The applicant will work in an interdisciplinary project that involves biochemistry, molecular biology and biophysics. The primary role of the PhD student in the project will deal with the isolation and characterization of novel [FeFe] hydrogenases of potential biotechnological or medical relevance. Selected enzymes will be characterized in depth utilizing a combination of electrochemistry and time-resolved spectroscopy (transient absorbance and IR spectroscopy), with a focus on determining reaction mechanisms. The work will be performed by the PhD student in collaboration with theoreticians, spectroscopists and synthetic chemists at Uppsala University and abroad. Thus, beyond training in several advanced experimental techniques, the project will also provide a strong international network.

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%).

## **Requirements**

- has been awarded a second-cycle qualification in chemistry, biochemistry or biophysics or a closely related topic, 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.
- very good oral and written proficiency in English.
- experience in working with proteins (during studies or in industry).
- experience in spectroscopy studies of proteins.
- 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.

## **Additional qualifications**

- Advanced knowledge and/or practical experience in biochemistry, spectroscopy and/or (bio)inorganic chemistry is desirable.
- Prior experience in working with metalloenzymes will be beneficial.

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 *2023-01-01* or as agreed. Placement: Uppsala

**For further information about the position, please contact:** Gustav Berggren;  
Gustav.berggren@kemi.uu.se

**Please submit your application by 14 November 2022, UFV-PA 2022/3934.**

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 2022/3934

**Last application date:** 2022-11-14

**[Apply for position](#)**