

Electrochemical Synthesis with Asymmetric Twist

Summary

A PhD position in an organic chemistry group that focuses on the development of sustainable synthetic methods in continuous-flow. In the course of this project, a PhD student will be involved in merging asymmetric organocatalysis with electrochemistry in flow. Asymmetric catalysis plays one of the most important roles in the modern organic chemistry providing methods for the synthesis of biologically active compounds and pharmaceuticals.

Research field:	Chemistry and biotechnology
Supervisor:	Dr. Maksim Ošek
Availability:	This position is available.
Offered by:	School of Science Department of Chemistry and Biotechnology
Application deadline:	Applications are accepted between June 01, 2022 00:00 and June 30, 2022 23:59 (Europe/Zurich)

Description

The PhD student will work on the development of new asymmetric electrochemical methods in continuous-flow. The approach is based on merging well-developed organocatalysis with electrochemistry, which opens new horizons for asymmetric transformation beyond the classical activation. Such transformations are sustainable, since they employ electrons as traceless and green reagents to generate reactive radical species avoiding the utilization of highly toxic and expensive RedOx chemicals. The efficiency and reliability of such methods can be enhanced by performing the reaction in continuous-flow mode.

The PhD project is an example of cutting-edge science combining different research areas of organic synthesis and chemical engineering that can be potentially applied for discovery of new and potent life-saving drugs. The PhD student will plan and conduct experiments in a chemistry laboratory, perform analytical studies and characterization of newly synthesized compounds. He/she will present his or her results at the regular group progress meetings and finally write a draft version of a manuscript. The PhD student will also be involved in the supervision of master's or bachelor's degree students.

Requirements:

- Master's degree in Organic chemistry, biochemistry, or related subject with advanced chemistry coursework
- work experience in a research laboratory
- good command of English



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