



University of
Zurich ^{UZH}

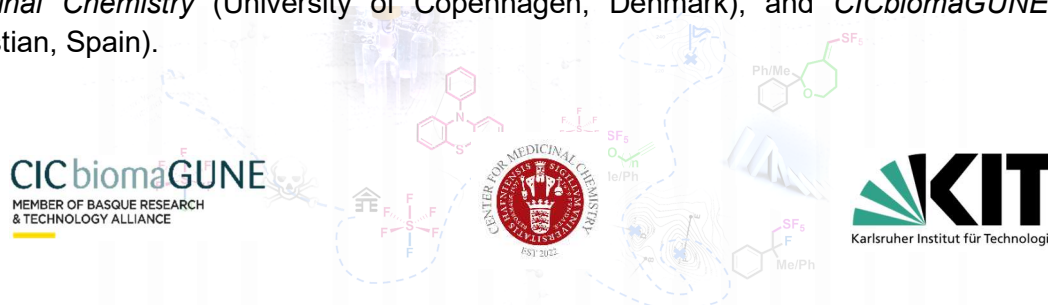


Swiss National
Science Foundation

PhD position in Organofluorine chemistry: development of a toolbox to access novel fluorinated motifs (60%)

4 years, fixed-term, as soon as possible, Zurich (Switzerland)

We are currently seeking an enthusiastic and motivated PhD student for an exciting project in organofluorine chemistry and photoredox catalysis at the *University of Zurich*. The project aims to develop novel methods for charting fluorinated chemical space. The research is strongly interdisciplinary and combines aspects of synthetic inorganic-, organic-, radio- and photochemistry with mechanistic studies using an integrated spectroscopic approach as well as computational chemistry. The position is funded by the *Swiss National Science Foundation* and is embedded in a strong European collaborative network that includes collaborators at the *Karlsruhe Institute of Technology* (Karlsruhe, Germany), the *Center of Medicinal Chemistry* (University of Copenhagen, Denmark), and *CICbiomaGUNE* (San Sebastian, Spain).



Project background and research interest

Fluorinated functional groups play a key role in modern life sciences. They alter the properties of organic molecules in unique ways, making fluorinated compounds highly desirable for medicinal chemistry, agrochemistry or the development of functional materials. In 2021, for example, the FDA has approved 50 drugs, 9 of which are fluorinated. However, synthesis of fluorinated molecules often requires harsh conditions or specialized equipment. The mapped chemical space today includes about 10^8 molecules, while a much larger number have yet to be discovered. For the class of emerging fluorinated molecules, a special subset of fluorinated molecules, there are only a few (or even not a single) generally applicable methods to access these compounds, severely limiting their exploration in modern life sciences. Exploring this unknown chemical space will therefore allow more of these motifs to be discovered and their full potential for modern drug discovery and life science programs to be realized. Our research interest is primarily focussed on the development of unprecedented modes of reactivity of small molecules (e.g. SF_6) or easily accessible reagents (e.g. TASP). Here, our focus is either on accessing novel structural motifs or facilitating access to known motifs (e.g. SF_5) to make them accessible to a wide user community. A second area of research involves the discovery and evaluation of properties of new fluorinated motifs and the development of bench-stable reagents that enable their transfer to organic molecules.

Your profile

We are looking for an *enthusiastic, dedicated* and *creative* individual. The successful candidate will be driven by curiosity and be a strong and proactive team player. Fundamental communication skills in English are required. The applicant must have a M.Sc. degree in chemistry, chemical engineering, chemical biology, or a related field. Previous experience in organic synthesis, inorganic synthesis, organometallic chemistry, or photochemistry is a plus but not required.

Who we are

We are a very dynamic young research group. Looking for new adventures in organofluorine chemistry, the group is led by Dr. David Rombach. We strive to treat each other with respect and to create an encouraging and motivating work atmosphere that values the individual, whoever that may be. Our goal is to guide you through the challenges associated with a PhD and an innovative research program, and to support you in all aspects of this exciting journey so that you can grow. It is important to us to help you develop creative and critical thinking as well as strong research skills. The core competencies of our group include photochemistry (e.g. excited state dynamics, radical chemistry) and organofluorine chemistry. We will be accommodated in [Prof. Jason Holland's labs](#) in a [very modern chemistry building](#) with all scientific amenities at the [University of Zurich, Irchel campus](#). You will be embedded in a curiosity-driven research environment that offers a wide range of opportunities to grow, with exposure to a variety of disciplines ranging from medicinal chemistry to pump-probe spectroscopy to radiochemistry. The opportunity to participate in research seminars, group meetings, and social activities will allow you to develop into a more independent researcher.

Excited for your new adventure in chemistry?

We are looking forward to receiving your application by email as a single PDF document including your **letter of motivation**, quickly describing what drives you to join our team, a **short research summary** (BSc, MSc etc.), your **CV**, your **transcripts of records** and **certificates** as well as the details of **one reference**.

To apply, please send these documents to david.rombach@kit.edu

If you have further questions or would like to have more information on the position, please don't hesitate to contact us at the email address provided above.

For more information about David and our research interest, you can visit his [ORCID](#) or [LinkedIn profile](#).