# 2 PhD Positions in Organic Contaminant Transformations

We are currently seeking candidates for two PhD projects in environmental organic chemistry with an immediate or mutually agreed-upon starting date.

**Project 1** is part of the recently established Cluster of Excellence "Microbiomes Drive Planetary Health"[1] and aims to investigate the transformation of emerging organic contaminants by oxygenase enzymes in different microbiomes. These enzymes can exhibit poor efficiency in oxygen utilization under certain conditions, leading to the unintended production of reactive oxygen species (ROS). The PhD candidate in this project will develop methods for ROS quantification and perform exposure experiments with emerging contaminants, such as tire additives, pharmaceuticals, and consumer/industrial products, and microbial communities from soil, wastewater, and the human lung. Results from this project, and from the whole Cluster of Excellence, will refine our understanding of how emerging organic contaminants can (negatively) impact environmental and human microbiomes.

In **Project 2**, the photochemical transformation of emerging organic contaminants, such as tire additives, pharmaceuticals, and consumer/industrial products, will be investigated by compound-specific isotope analysis and high-resolution mass-spectrometry. A primary objective for this PhD project is the development of novel analytical methods to broaden the application of compound-specific isotope analysis to more polar contaminants and multiple elements (C, H, N, O, Cl, Br). After optimization, these methods will be used to investigate transformation mechanisms of selected contaminants with a focus on photochemical transformations in natural and engineered aquatic systems. Results from this research will contribute to improving the applicability of compound-specific isotope analysis as a valuable tool to assess the fate or emerging organic contaminants in the environment.

**Who we are:** The Department of Environmental Geosciences[2] (EDGE) is an integral part of the Center for Microbiology and Environmental Systems Science (CMESS) at the University of Vienna (Austria). Our research group consists of a dynamic, international team of researchers dedicated to addressing critical environmental challenges. Our research covers a wide range of topics, from emerging contaminants to transformation, from basic to applied research.

[1] https://microplanet.at/
[2] https://edge.univie.ac.at/

**We offer:**

- Supervision, mentoring, and career development from internationally recognized senior scientists.
- A dynamic, stimulating, and international working environment with English as the working language and access to excellent laboratory facilities.
- A fully funded position in accordance with the collective bargaining agreement, including a competitive salary with full benefits.
- The chance to live and work in the vibrant city of Vienna, which is renowned for its high quality of life, excellent public services, and affordable living, and is consistently ranked among the top cities in the world.[3]

**Your Profile:** To be considered for this position, we are looking for candidates with the following qualifications:

- A Master's degree in environmental science, environmental chemistry, environmental engineering, or related fields.
- Laboratory experience, especially in the design of transformation experiments and with LC-MS or GC-MS.
- Analytical experience with high-resolution mass spectrometry and/or compound-specific isotope analysis would be an advantage.
- Fluent written and oral communication skills in English.
- Highly motivated, independent, and reliable.

**How to apply:** To apply for this position, please submit (by e-mail to sarah.pati@univie.ac.at) a single PDF file containing the following documents:

- A letter of motivation outlining your interest in one (or both) of the two projects and your relevant experimental and analytical experience.
- A comprehensive curriculum vitae, please be specific and include details of your skills and university grades.
- Contact details of two referees who can provide a reference for you.
- A Copy of your Master's thesis, if available, or a short summary/outline of the most important experimental plans and outcomes.

Applications will be considered until the positions are filled. For further information, please contact Dr. Sarah Pati (sarah.pati@univie.ac.at).

[3] https://www.wien.gv.at/english/politics/international/comparison/mercer-study.html
https://www.numbeo.com/cost-of-living/in/Vienna