

PhD Position in Environmental Analytical Chemistry - PFAS Source Identification using Stable Isotope Analysis (3 years)

Job description

The Research Facility for Subsurface Remediation (VEGAS) at the University of Stuttgart is looking for a highly motivated PhD candidate to join our DFG-funded research project “IRIS-PFAS: Investigations to Reveal Isotope Signatures of PFAS through Orbitrap-CSIA: From Method Development to Application”.

About the Project

Per- and polyfluorinated alkyl substances (PFAS) are among the most persistent and problematic environmental contaminants of our time. There is an urgent need for methods that not only detect concentrations but also provide information about origin, transport, and transformation processes. The analysis of stable isotopes offers great potential in this regard, but has hardly been exploited to date. The aim of this project is to develop and establish a new analytical methodology for the isotope-specific characterization of PFAS based on high-resolution mass spectrometry (Orbitrap MS).

The project is deliberately exploratory in nature and takes into account the early stage of development of Orbitrap-based isotope analysis. The project will deliver validated analytical protocols, fundamental insights into isotope behavior of PFAS, and a proof-of-concept for isotope-based PFAS source tracing. By overcoming key limitations of traditional IRMS, the proposed research establishes a new analytical framework for environmental forensics of persistent pollutants. For more Information about this project, see our Project page: https://www.iws.uni-stuttgart.de/en/institute/research/projects/vegas/20270101_215_IRIS-PFAS/

We offer

- A funded 3-year PhD position (75%-position) (employment conditions of the state of Baden-Württemberg (Tarifvertrag für den Öffentlichen Dienst der Länder, TV-L 13)
- Expected start date: 11. January 2027 until 31.12.2029
- A supportive, interdisciplinary research team
- Access to state-of-the-art laboratory and experimental infrastructure



- Opportunity to join a structured doctoral program

Profile and Qualifications

Your Responsibilities

- Conduct independent research within the framework of the PhD project. Plan, perform, and evaluate laboratory experiments.
- Develop, optimize, and validate analytical methods for PFAS isotope analysis and contribute to the development of isotope-based approaches for source identification of PFAS.
- Present research results at national and international conferences.
- Support the supervision of student projects and contribute to teaching activities where appropriate.
- Publish findings in peer-reviewed scientific journals.
- Collaborate with project partners from academia and industry
- Maintain accurate laboratory documentation and contribute to good scientific practice.

Your Qualifications

- Master's degree in Environmental Sciences, Chemistry, Analytical Chemistry, Geosciences, Chemical Engineering, or a related discipline.
- Strong interest in analytical chemistry, contaminants of emerging concern and transport processes in the subsurface.
- Knowledge of mass spectrometry and Orbitrap technology is advantageous
- Enthusiasm for laboratory work; experience with laboratory or field methods is an advantage.
- Ability to work independently while contributing effectively to a multidisciplinary research team.
- Excellent written and spoken English.
- Team-oriented, and motivated.
- Motivation to publish scientific results and complete a doctoral degree.
- German language skills are advantageous.

About us

VEGAS is a research institution of the University of Stuttgart. We conduct innovative research on the fate and transport of contaminants in the subsurface, advanced environmental analytical chemistry, and the development of sustainable remediation technologies. Our experiment-



based research integrates state-of-the-art analytical techniques, including high-resolution mass spectrometry, with investigations of groundwater flow, transport and reaction processes in porous media across multiple scales - from laboratory experiments and analytical method development to large-scale experimental facilities and field pilot sites.

The University of Stuttgart represents outstanding, world-renowned research and first-class teaching in one of Europe's most dynamic industrial region with almost 20.000 students and over 5.000 employees. Our Welcome Center helps international scientists get started in Stuttgart. Stuttgart itself is a vibrant city known for its strong economy and rich cultural heritage and is the sixth largest city of Germany and forms a hub in the South-West. The University is located in the south of Stuttgart and can easily be reached by public transport.

Women who apply will be given preferential consideration in areas in which they are underrepresented, provided they have the same aptitude, qualifications and professional performance. Severely disabled applicants with equal qualifications will be given priority. Recruitment is carried out by the central administration of the University of Stuttgart

Application

If you are interested in this versatile PhD opportunity, please apply with the following documents until 15th October 2026

- Motivation letter (max 1 page).
- A one-page outline explaining how you would begin developing the analytical method required for this project. Your statement should describe your proposed workflow, identify potential pitfalls, and discuss possible solutions.
- CV with two references with their contact information listed.
- Certificates / transcripts.
- An electronic version of a research output (MSc diploma thesis, research report, proceedings paper or other scientific publication).

Please send your application via the portal JoinUS: <https://careers.uni-stuttgart.de/job/Stuttgart-PhD-Position-in-Environmental-Analytical-Chemistry/1369368455/>

Questions regarding the application may be sent to jobs.vegas@iws.uni-stuttgart.de

Information in accordance with Article 13 DS-GVO on the processing of applicant data can be found at https://careers.uni-stuttgart.de/content/privacy-policy/?locale=en_US

