

The Chair of Analytical Chemistry and Water Chemistry at the Technical University of Munich (TUM) is committed to excellence in research, teaching and interdisciplinary education. We strive to proactively develop analytical tools for detecting health risks to humans and the environment, to better understand pollutants and pathogens dynamics, and to provide mechanistic insights for decision-makers and practitioners to better solve environmental challenges.

We are looking for a

## **PhD Student (m/f/d) in Environmental Analytical Chemistry**

Your research will focus on investigating degradation of nonpoint source micropollutants on a large aquifer-scale using compound-specific isotope analysis (CSIA).

The widespread occurrence of anthropogenic organic micropollutants in the environment such as pesticides and pharmaceuticals raises major questions about the fate of these compounds in groundwater. While their degradation is challenging to demonstrate under field conditions using only concentration dynamics, changes in isotope ratios, which is monitored by CSIA, offers conclusive complementary information.

In this project, you will investigate approaches of isotope techniques by (a) designing and conducting sampling campaigns in contaminated sites, (b) applying concepts of molecular recognition for isotope measurements in groundwater contaminated with pesticides, (b) screening the variability of the pesticide isotope ratio, (c) constraining source signatures of the applied pesticides, (d) conducting controlled isotope fractionation experiments at low concentrations. You will contribute to development of bottom-up approaches and test them in the lab and in the contaminated site.

### **Your Qualifications**

Applicants must have completed a Master's degree in chemistry, geology, environmental sciences/engineering, or closely related science field. Strong analytical and laboratory skills are required with experience in sample preparation of environmental water, mass spectrometry, degradation and sorption studies. In addition, experience with field work in groundwater systems and isotope techniques is an asset. An excellent standard of written and spoken English is required and knowledge of German is an advantage. In the scope of the project, collaboration with other research institutes is envisioned. Interpersonal skills are, therefore, required with the ability to effectively communicate results in an international team environment.

### **We offer**

- Working in an innovative, well-equipped and scientifically stimulating international environment.
- Further training opportunities through the chair and the graduate school at TUM.
- Remuneration according to standard public service salary (TV EntgO Bund EG 13, 65%) for three years' duration.
- Technical University of Munich is striving to increase the proportion of women; application from women are therefore expressly welcomed.

### **Applications**

If you are highly motivated, enthusiastic and independent person with passion to conduct research, submit your application to [Dr. Rani Bakkour](#) by email until **31 July 2021**. Your application should include a cover letter, a complete CV, along with three references, relevant documents such as certificates, transcript of marks, theses and publications.