

The Department of Isotope Biogeochemistry at the Helmholtz Centre for Environmental Research GmbH - UFZ is offering the following **internship/master thesis**:

***Degradation process of typical city pollutants in green roofs using stable isotope techniques***

The study will take up to 6 months.

**Your tasks:**

**Background**

Green roofs (roofs with a planted surface) play an important role in the ecosystem in urban area. Plant derived enzymes or the endophytes could have the possibility to reduce the typical pollutants origin from the city such as the mercaptobenzothiazole which was the material of tires. Combining the isotope technique, we will investigate the uptake, transportation and degradation process of typical pollutants origin from urban area in the plants in green roofs. The Department of Isotope Biogeochemistry offers a MSc thesis topic, which is aiming at the identification of green roofs for the *in situ* biodegradation of typical city derived organic pollutants.

**Precise tasks:**

1. Being in charge of *in situ* plant uptake and degradation experiment through a pollutant-spiking method on the green roof which is available in the UFZ
2. Sampling the soil, water and plants and extracting the pollutants from these matrices
3. Concentration measurement of pollutants using GC-FID
4. Identifying the metabolism using GC-MS and GC-IRMS
5. Isotope fractionation analysis using GC-IRMS and GC-MC-ICP-MS
6. Interpretation of the data.

The study can start from February and will take up to 6 months for internship, or 6 months for master thesis. The working place will be Leipzig and Halle. This topic is part of a PhD thesis.

**Your profile:**

- Basic knowledge in soil science, plant physiology, environmental chemistry, biogeochemistry or similar
- Interest in instrumental analytics (GC-FID, GC-MS, GC-IRMS and GC-MC-ICP-MS)
- Patience and the ability to work in a precise and reproducible manner
- Highly motivated

**We offer:**

- Great insights into the work in a leading research institute
- Individual supervision
- Possibility to obtain hands-on experience with state-of-the-art equipment

- Work in an interdisciplinary and multinational team
- Co-authorship in a peer-viewed paper when the work is completed.

Contact:

Please send your application including CV and transcript of records of your taken courses to:

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Closing date for applications:

Please use our online application system for your application.