

Montanuniversität Leoben, Austria



PhD Position

Project: MURmap - Holistic geochemical tracking of inorganic pollutants in the Mur/Mura River Catchment

FWF-project (2022-2024)

Job description: We offer a PhD position with the topic: *Elemental and isotopic mapping of a European River Catchment on the Example of the Mur river* in a young international team within a highly transdisciplinary CEUS-FWF-funded project.

Extent of employment: 30 hours per week, 3 years; Salary group B1 according to Uni-KV, monthly Minimum wage excl. Surcharge: € 2.237,60 for 30 hours per week (14 times a year) - the actual classification is based on the creditable job-specific previous experience.

Duration of employment: Three years. **Start anytime.** Please send your documents asap.

Workplace: MUL Leoben, Austria

Applications to: johanna.irrgeher@unileoben.ac.at

Project background:

The project will shed light to the processes between geosphere and anthroposphere interactions in the fragile system of Mur/Mura River. The potential of combined element fingerprinting, and isotope tracer approaches to elucidate natural and anthropogenic processes in a complex river system will be demonstrated.

The PhD candidate will be embedded in project activities related to determine (1) natural geochemical background of the river's catchment area, (2) the historic and recent anthropogenic sources of elements, (3) interaction between solid and liquid phases in different physical and chemical water conditions, (4) individual particles - carriers of specific pollutants, (5) differences in elemental composition of water and sediments in high, medium and low water regime (6) the potential contamination and baseline levels of emerging modern high-technology pollutants, (7) chemical and isotopic composition (based on XRF and MC-ICP-MS) of drainage systems, including drainage waters and drainage sediments and will (8) establish a sampling, analytical and data curation protocols for such a complex dataset. The obtained data and information will be (9) merged into an easily understandable set of ecological indicators and maps.

Responsibilities

We offer a challenging project work on the subject of "Elemental and isotopic mapping of a European River Catchment on the Example of the Mur river" as part of a PhD thesis. The work is embedded in a FWF-funded research network in the project "MURmap - Holistic geochemical tracking of inorganic pollutants in the Mur/Mura River Catchment" in an international project team between the Montanuniversität Leoben (Chair of General and Analytical Chemistry, Chair of Waste Processing Technology and Waste Management), the Slovenian Geological Survey (GeoZS) and the National Institute of Chemistry (NIC), Slovenia.

The focus of this PhD thesis lies in the development and application of analytical methods for elemental analysis (with a focus on technology-critical elements) and high-precision isotope ratio analysis (Sr, Pb, B, Cr), including isolation methods and measurement procedures based on mass spectrometry (MC-ICP-MS and TIMS).

We offer a varied and independent job in an international team with high-end lab infrastructure and instruments. A team-oriented working atmosphere, intensive cooperation with project partners and options to teaching offer ideal professional and personal development opportunities. The Montanuniversität promotes career paths and offers excellent framework conditions for social diversity in a contemporary working environment. The Montanuniversität Leoben aims to increase the proportion of women and therefore expressly encourages qualified women to apply. Women will be given priority if they have the same qualifications as the most suitable competitor.

Applications: Please send us (1) your CV, (2) transcript of records and a (3) a one-page motivation letter.

Montanuniversität Leoben seeks to increase the number of its female faculty and staff members. Therefore, qualified women are strongly encouraged to apply. In case of equal qualification, female candidates will be given preference unless reasons specific to an individual male candidate tilt the balance in his favor.