

## PhD Project in Geomicrobiology & Biogeochemistry

The Geomicrobiology research group at the University of Tübingen is looking for a PhD student working on:

### ‘Arsenic removal by drinking water filters in Hanoi, Vietnam’

Elevated levels of toxic arsenic (As) in groundwater are a health problem affecting over 100 million people worldwide, particularly in the densely populated river deltas of South and Southeast Asia. In villages in the Hanoi area (Vietnam), simple sand-based drinking water filters (see photo) are used to remove the arsenic from the water before consumption. In these filters, the arsenic binds to the orange iron(III) oxyhydroxides that are formed on the sand grains.

In a previous study we have identified the main biogeochemical processes in the filter that lead to efficient arsenic removal from the water (see publications on our webpage). However, it is unclear how long the filters can be safely used and how the filter performance can easily be determined. Additionally, it is unknown how to dispose the used arsenic-loaded filter material best after it has been replaced by fresh sand. The PhD project in the Geomicrobiology group at University of Tübingen will use a combination of geochemical analyses, column experiments and microbial incubation experiments to develop a visual indicator that allows the filter users to easily see whether the filter still works and efficiently removes the arsenic. Additionally, we will evaluate the risk of arsenic re-mobilization from the used filter material after disposal. The project includes fieldwork and sampling in Vietnam as well as laboratory experiments in Tübingen. The ultimate goal is to improve the usage of such drinking water filters to remove As from the water and to improve the living situation of the local population.



We are offering a PhD position in an interdisciplinary, international, and dynamic team of geomicrobiologists, microbial molecular ecologists, and geochemists. This position provides an opportunity for the candidate to be creative and innovative, to work on a challenging and environmentally relevant topic that combines various fields, and to do field work in Hanoi/Vietnam. Ideal candidates should have a **solid background in Environmental Chemistry and interest in Environmental Microbiology and Geomicrobiology**. Applicants must have the ability to work independently and in a team, have excellent management and communication skills, and should be highly motivated and committed to pursuing interdisciplinary research. Good computer and language skills (English) are necessary. The candidate will have the opportunity to present his/her results in international journals and conferences.

The starting date is **July 1<sup>st</sup>, 2018** or as soon as possible thereafter. The employment (TVL E13, 65%, 3 years) will be arranged by the administration of the University of Tübingen. Disabled persons will be preferred in case of equal qualification.

**Applications including CV, motivation letter, and overview of techniques and methods used in the past should be sent by email before April 30<sup>th</sup>, 2018 to:**

Prof. Dr. Andreas Kappler, Geomicrobiology group, Center for Applied Geosciences, University of Tübingen  
Sigwartstrasse 10, D-72076 Tübingen, Germany. Email: [andreas.kappler@uni-tuebingen.de](mailto:andreas.kappler@uni-tuebingen.de)

More information including recent publications can be found on our website:

<http://www.geo.uni-tuebingen.de/arbeitsgruppen/angewandte-geowissenschaften/geomikrobiologie.html>