

PhD Project in Geomicrobiology/Biogeochemistry

The research group for Geomicrobiology at the Institute for Geosciences at the University of Tübingen is looking for a PhD student (Geomicrobiologist, (Bio-)Geochemist) who will work on:

‘Competition of iron(II)-oxidizing bacteria in marine and freshwater sediments’

Bacteria have developed metabolisms that are based on the utilization of ferrous iron [Fe(II)] as electron and energy source for growth already billions of years ago. They either use O₂, nitrate or light energy to catalyze Fe(II) oxidation and coexist in surface sediments in close proximity. It is unknown, however, how these different physiological groups interact and compete with each other in freshwater and marine sediments and how this interrelation influences the formation and transformation of biominerals and the environmental fate of trace metals.

This PhD position offers the possibility to study the activity of these three physiological groups of Fe(II)-oxidizing bacteria in marine sediments from Aarhus Bay (Denmark) and freshwater sediments from Lake Constanze. Approaches will include field work as well as laboratory experiments in particular cultivation of iron(II)-oxidizing bacteria in chemostats and stratified columns combined with analysis of mineral identity (XRD, Mössbauer spectroscopy, synchrotron-based X-ray absorption techniques), trace metal mobility and the formation of gases such as N₂O. Field sampling will also be part of the project that is funded by the European Research Council (ERC). The ultimate goal is to determine which fraction of the organisms is active in communities and how their activity controls the formation of poorly soluble Fe(III) minerals and the fate of nutrients and contaminants in nature and to better understand the potential role and evolution of these metabolisms on early Earth.

We are offering a PhD position in an interdisciplinary, international, young and dynamic team of microbiologists, geochemists and geoscientists. This position provides an opportunity for the candidate to be creative and innovative, and to work on a challenging topic which combines various fields within environmental sciences. Ideal candidates should have a **solid background in environmental chemistry, environmental microbiology and/or biogeochemistry**. Applicants must have the ability to work in a team, have good 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 participate in field work and present his/her results in international journals and conferences.

The starting date is **July 15th or September 1st** or as soon as possible thereafter. The employment (TVL E13, 50%, 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, overview of techniques and methods used in the past should be sent by email before April 30th 2014 to:

Prof. Dr. Andreas Kappler, Geomicrobiology group, Center for Applied Geosciences, University of Tübingen Sigwartstrasse 10, D-72076 Tübingen, Germany, Phone: ++49-7071-2974992

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More information including recent publications on the advertised PhD topic can be found on our website: <http://www.geo.uni-tuebingen.de/arbeitsgruppen/angewandte-geowissenschaften/geomikrobiologie.html>